

## Supplementary Information

### Cellular mechanisms of transcriptional regulation of human cell lines exposed to cadmium-based quantum dots.

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## **S1 Supplementary Information**

### *S1.1 Experimental*

#### *S1.1.1 CdS Quantum Dots Characterization*

In this paper we used the same batch of CdS QDs as in previous works. Full characterization, included hydrodynamic diameters and zeta potential, is described in the Supplementary data of Paesano et al.<sup>1</sup> and of Marmiroli et al.<sup>2</sup> In particular, the CdS QDs were characterized in deionized water by transmission electron microscopy (TEM) (Hitachi HT7700, Hitachi High Technologies America, Pleasanton, CA). Average static diameter was 5 nm, and the crystal structure was that of wurtzite (CdS) with approximately 78% Cd. Average particle size (dh) of the agglomerates and zeta potential ( $\zeta$ ) in ddH<sub>2</sub>O were estimated to be 178.7 nm and +15.0 mV, respectively (Zetasizer Nano Series ZS90, Malvern Instruments, Malvern, UK). These measurements were also performed for CdS QDs in the culture medium used in the experiments. X-ray diffraction was performed and a field emission high resolution (Scherzer resolution of ~0.19 nm) JEM2200 FS transmission electron microscope (JEOL Ltd., 3-1-2 Musashino, Akishima, Tokyo, JAPAN) was used to examine the structure of the CdS QDs. An ESEM Quanta 250FEG, FEI (FEI company, 5350 NE Dawson Creek Drive Hillsboro, Oregon 97124 USA, Bruker, Am Studio 2D, 12489 Berlin, Germany) was utilized to determine CdS QDs group morphology and elemental content.

#### *S1.1.1 TNF $\alpha$ determination*

After 4 and 24 hours of treatment, 100  $\mu$ l of medium was transferred to 96-well plates functionalized with anti-TNF $\alpha$  antibody and incubated 90 min at 37°C. Then, 100  $\mu$ l of biotinylated antibody was added in each well and, after 1 h of incubation at 37°C, 100  $\mu$ l of streptavidin solution was also added. After 45 min the samples were incubated with 100  $\mu$ l of the TMB One Step Reagent contained in the kit solution and, after 30 min, the reaction was stopped and

absorbance was immediately read at 450 nm with a multimode plate reader Perkin Elmer Enspire (Waltham, MA, USA).

A standard curve was generated using eight points of concentrations of human TNF $\alpha$  standard solution.

### *S1.2 Statement on QDs risk of dispersion*

The data available on QDs production<sup>3-5</sup> are only suggestive of a possible risk of dispersion both at the production sites and after the use and disposal.<sup>6-8</sup> The past experience on other materials have suggested that anytime the production and commercialisation reach a certain relevance the risk becomes consistent. Please consider that the risk is also determined not only by the frequency but also by the intensity of the possible hazard and with some QDs the hazard may be really relevant, as it is for Cd-based QDs. But this may be a matter of conclusions. At this concern, it is relevant the paper published by EPA researchers 'Assessing the environmental effects related to quantum dot structure, function, synthesis and exposure'<sup>9</sup> and explicitly saying that: 'it is likely QDs will eventually enter the environment during manufacturing or through inappropriate disposal of the consumer products'.<sup>9</sup>

### *S1.3 Common Mechanisms*

There were correlative insights between ultrafine particulate (UFP) and QDs that can bring to the formulation of 'common mechanisms'. Dr. Megi Vogli, a Doctorate student from University of Parma, has discussed the correlation in her thesis of doctorate<sup>10</sup> made in cooperation with the Helmholtz Zentrum Munchen in German Research Center for Environmental Health. She found, according to Connor et al.,<sup>11</sup> that the basic inflammatory cascade of cytokines, the increase in the interleukin, were present in person more exposed to fine and ultrafine particles, as we have found

in the *in vitro* response to QDs and reported in the paper. Moreover, according to Xia et al.<sup>12</sup>, she has worked out a table of correlations between QDs and UFPs, which can be a starting point for a reductionist model for considering the common adverse effects of ultrafine environmental contaminants. Indeed, since small size is the key feature of UFPs related to their impact on human health, nanomaterials (as QDs) can be used as surrogate particles to investigate this impact at the cellular and molecular level.<sup>12</sup> This makes it possible to extrapolate useful information on the size-dependent effect of nanoparticles, and it also consistently simplifies the problem of sampling encountered with particulate. This represents an interesting possibility given the difficulty in performing *in vitro* toxicological studies with UFPs.<sup>13,14</sup>

The possibility of using QDs to define some of the cellular mechanisms in response to UFPs is even more interesting given the recent COVID-19 pandemic. Indeed, the role has been recognized that environmental factors play in influenza virus outbreaks and dispersion of pollutants. In particular, UFPs, has been considered as a potential key factor in the spread and mortality of COVID-19 (SARS-CoV-2).<sup>15–18</sup> The correlation with virus infection was discussed by Mescoli et al.<sup>19</sup> that found a number of correlation with the entity of infection and the incidence of environmental contaminants.

Figure 5, in which the mechanisms elicited by the nanomaterials was paralleled with those triggered by microparticulate and UFPs<sup>19</sup> or the infection with SARS-CoV-2,<sup>20</sup> was supported by references to make it more substantiated and the relative part of the discussion was also modified. The problem of nano/micro pollutants goes well beyond the industrial sector (including the sources of emission of UFP), but it influences also the effectiveness/susceptibility to viral infections. Figure 5 has also the purpose to show how the process may occurs and what are the common mechanisms that may be involved.

#### S1.4 Adverse effects outcome

Quantum dots (QDs) are characterized by their core type, shape, structure, size and ligands. Common cores include Cd, Zn, In and, more recently, carbon; all these encapsulated by chalcogenides such as selenides, tellurides and sulphide.<sup>21–25</sup> For core-type QDs as cadmium sulphide (the ones used in the paper) the oxidation is reduced thus reducing the leakage of Cd as we showed in several of our papers, but the same do not have any additional ligand. This type of QDs containing Cd (highly toxic metal) is of particular concern because of the substantial lack of knowledge on the human health effects. In the same way it has been raised a concern on the consequence of the increasing use of CdS QDs based products. Several reports on toxicity were published, including previous ones<sup>26–28</sup> from our laboratory. But few describe the interaction of QDs with living systems.<sup>29,30</sup> All the evidences so far obtained seem to indicate that toxicity of CdS QDs must rest on the toxicity of Cd.<sup>31</sup> The action of QDs starts with the intracellular trafficking with an interaction at the level of plasma membrane.<sup>32</sup> QDs internalize into mammalian cells by using different mechanisms of uptake<sup>11,33,34</sup> including clathrin-mediated endocytosis, caveolae-mediated endocytosis, and micropinocytosis.<sup>35–38</sup> After QDs have entered into the cells, the subcellular distribution depend on factors as the type of QDs and the presence of conjugated ligands. Endosomes and lysosomes are largely interested, but also mitochondria, endoplasmic reticulum and Golgi.<sup>39</sup> CdS QDs were studied in more details and the possibility of a biotrasformation step after their uptake was discussed.<sup>40</sup> The evidence of a biotrasformation (not a degradation or a leakage of Cd) may change dramatically the point of view on the mechanistic insights between these later structures and their effects.<sup>2,40</sup>

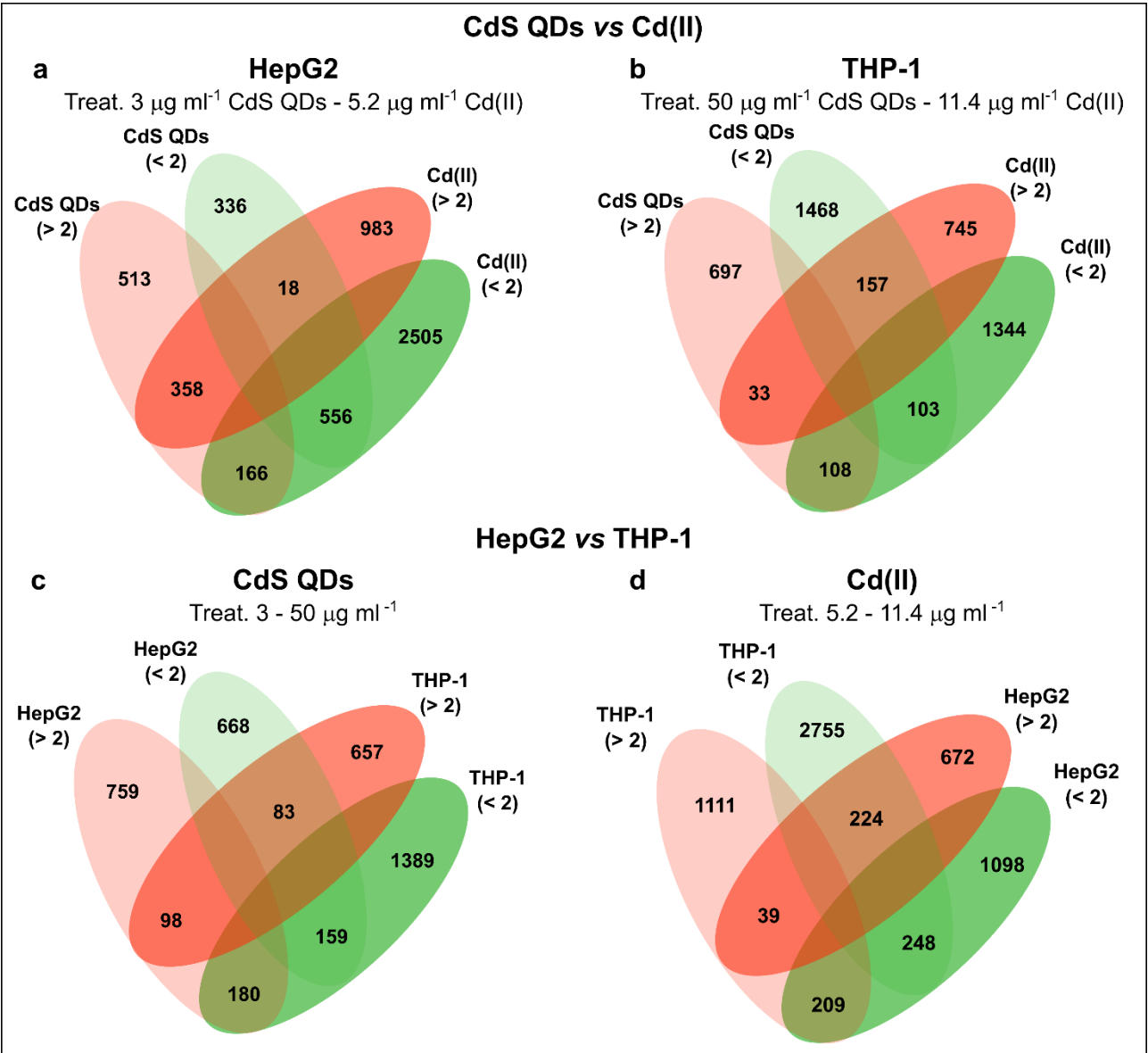
In previous papers, we have discussed all a series of cellular and molecular effects of CdS QDs on: cell survival, mitochondrial function, protein synthesis (including expression of specific proteins), production of ROS, replication of nuclear and mitochondrial DNA.<sup>26,28,41,42</sup> Of particular interest

were the consequence of the oxidative stress following QDs uptake at protein level with the up or down regulation of specific proteins, including those involved in the formation of 'hard corona'.<sup>43</sup>

We showed that one of the reason for this toxicity was in the interaction between QDs and enzymes of the hard corona.<sup>43</sup> At the same time we have shown that QDs determines a distorted replication of mitochondrial DNA,<sup>28</sup> possibly to compensate the break dawn of mitochondria due to factors that affect mitochondrial integrity with a leakage of cytochrome c (increase in membrane potential, increase in  $\text{Ca}^{2+}$ , enlargement of mitochondria). Some of these factors are reported here ( $\text{Ca}^{2+}$ ), others in previous papers.<sup>26,28</sup> Damage direct to DNA was not found in a previous paper<sup>26,42</sup> and the treatment of yeast with CdS QDs did not produce RD (Respiratory Deficient) mitochondrial mutants or any type of nuclear mutation.<sup>42</sup>

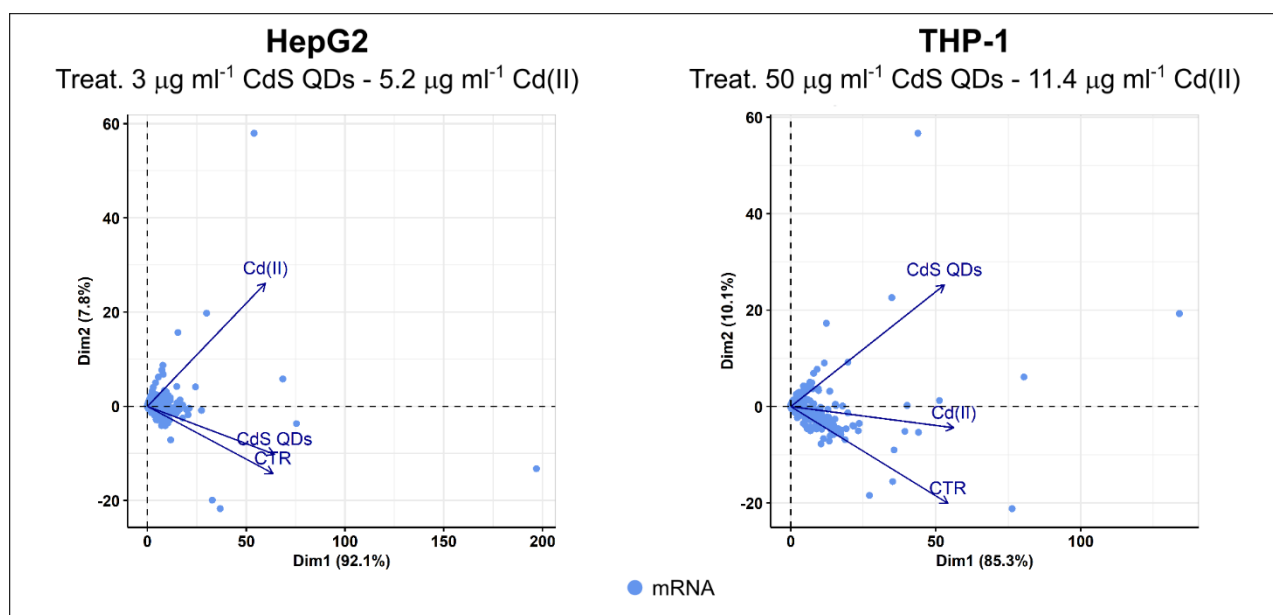
The report here that one of the functions involved (GO analysis) is concerned with DNA damage is therefore new and interesting. Therefore, it seems that the adverse effects are largely at morphological, physiological and molecular levels with an accent on regulation of epigenetic factors (like miRNAs) and of mRNA and proteins including components of the corona proteins and of the replication system of mitochondrial DNA.

# S2 Supplementary Figures



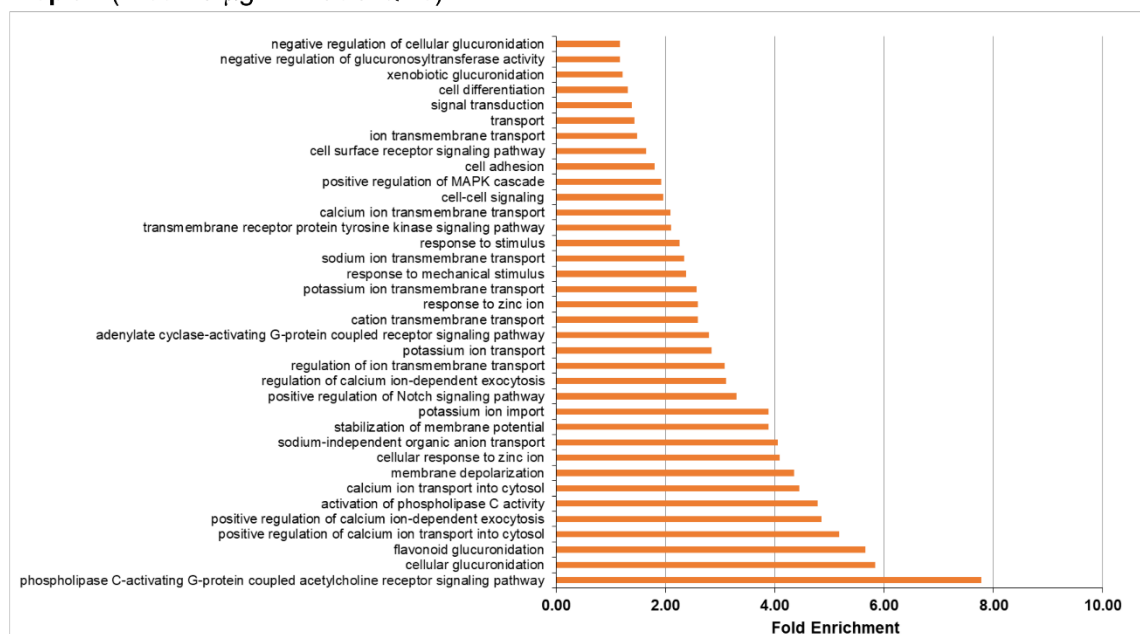
**Figure S1** Venn diagram representation of the effect of exposure to Cd on the mRNA expression profile. **a**, HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs and 5.2  $\mu\text{g ml}^{-1}$  Cd(II). **b**, THP-1 cells exposed to 39  $\mu\text{g ml}^{-1}$  Cd as 50  $\mu\text{g ml}^{-1}$  CdS QDs and to 5  $\mu\text{g ml}^{-1}$  Cd as 11.4  $\mu\text{g ml}^{-1}$  Cd(II). **c**, Comparison between HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs and THP-1 cells exposed to 39  $\mu\text{g ml}^{-1}$  Cd as 50  $\mu\text{g ml}^{-1}$  CdS QDs  $\mu\text{g ml}^{-1}$ . **d**, Comparison between HepG2 cells and THP-1 cells exposed to 5.2  $\mu\text{g ml}^{-1}$  of Cd(II) (corresponding to 2.3  $\mu\text{g ml}^{-1}$  Cd) and 11.4  $\mu\text{g ml}^{-1}$  of Cd(II) (corresponding to 5  $\mu\text{g ml}^{-1}$  Cd), respectively.



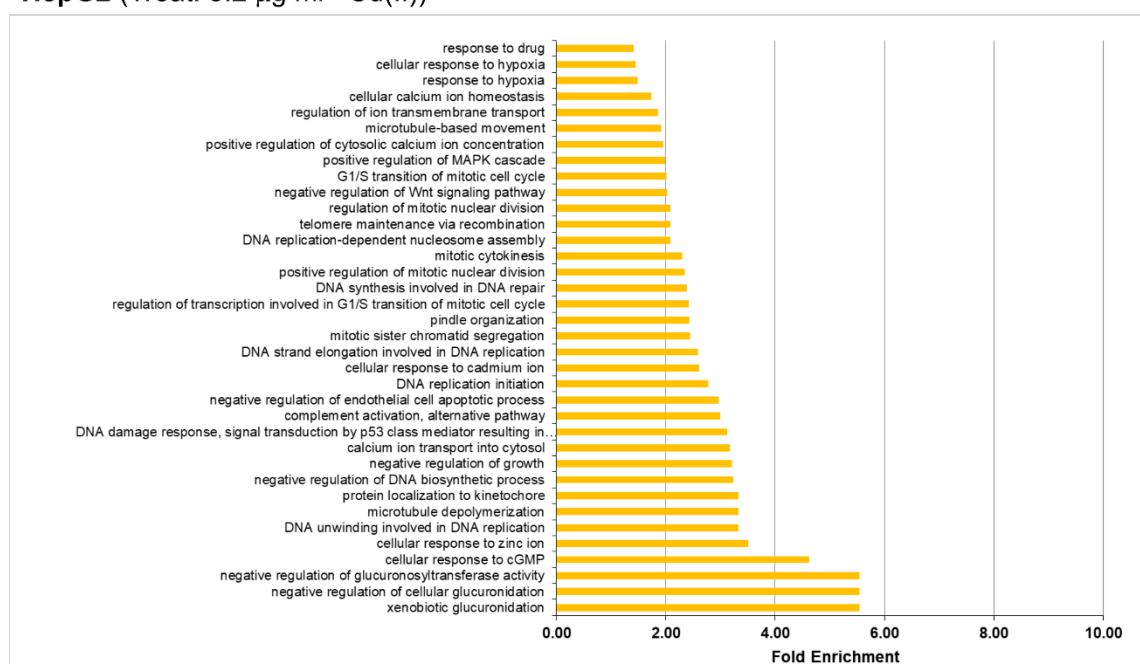


**Figure S2** Principal Component Analysis (PCA) on mRNA expression profiling in HepG2 and THP-1 cells. Result showing the grouping of samples based on their mRNA expression. In HepG2 cells, the behaviour of CdS QDs is more similar to CTR than to Cd(II). In THP-1 the three conditions (CTR – Cd(II) and CdS QDs) were separated. Untreated were showed as CTR, treatment as CdS QDs and Cd(II).

**a HepG2 (Treat. 3  $\mu\text{g ml}^{-1}$  CdS QDs)**



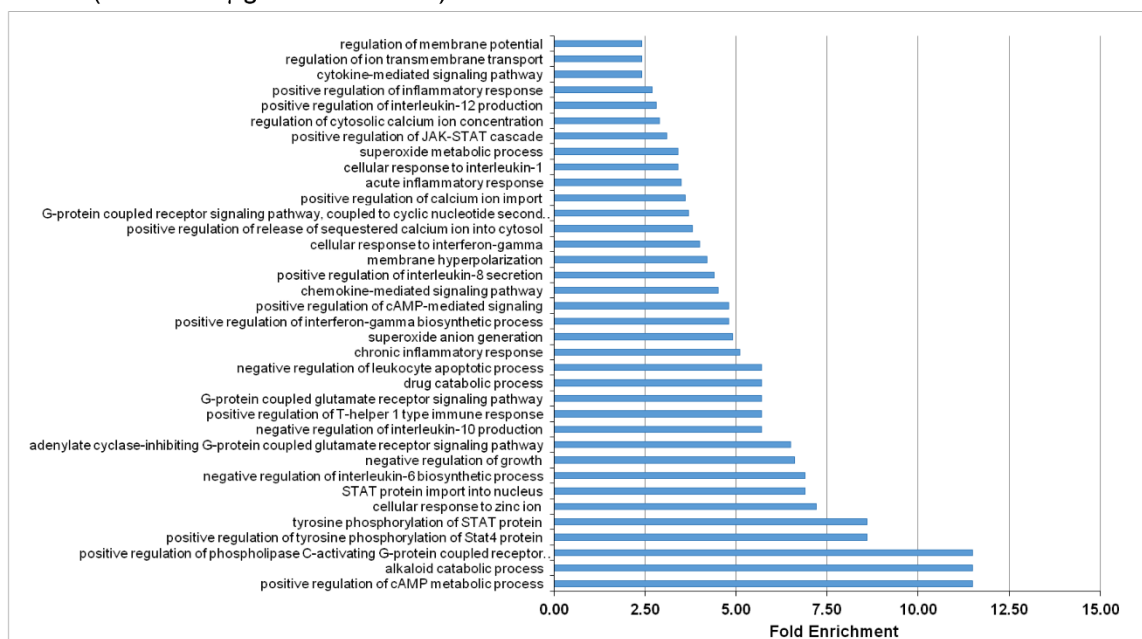
**b HepG2 (Treat. 5.2  $\mu\text{g ml}^{-1}$  Cd(II))**



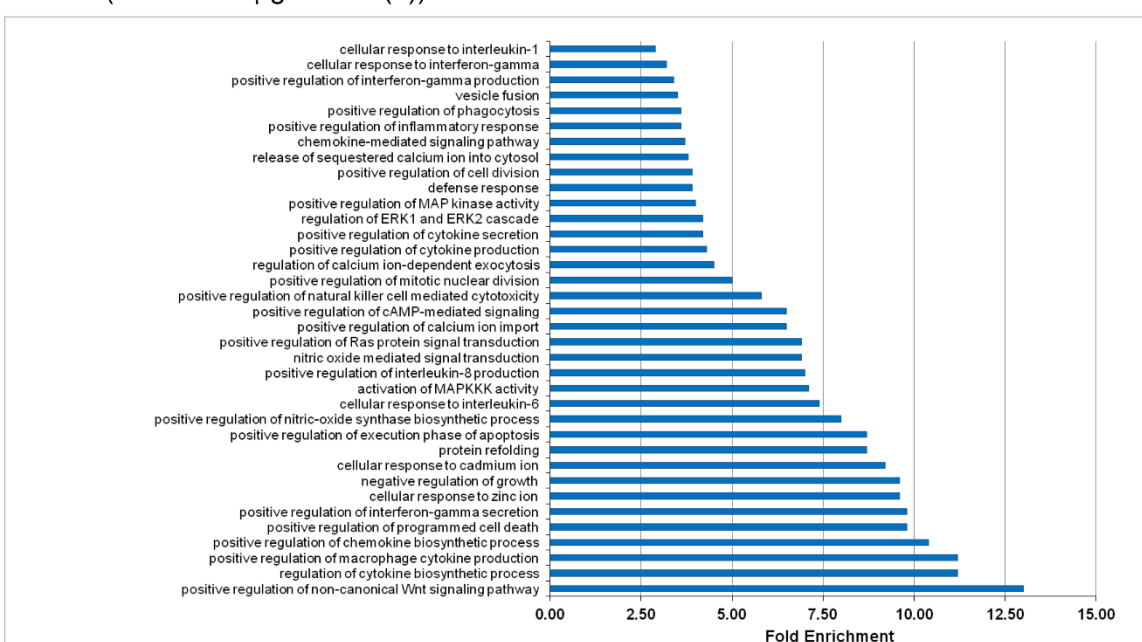
**Figure S3** GO biological process enrichment analysis of the mRNAs modulated in HepG2 cells by Cd exposure. **a**, Treatment with 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs. According to the GO enrichment analysis from PANTHER, the most significant changes were associated with calcium ion transport, xenobiotic glucuronidation and membrane potential. **b**, Treatment with 2.3  $\mu\text{g ml}^{-1}$  Cd as 5.2  $\mu\text{g ml}^{-1}$  Cd(II). The most significant changes were associated with glucuronidation events and, especially, with response to DNA damage and cell cycle regulation.

Note: GO enrichment analysis were performed using PANTHER software ( $p < 0.001$  and  $\text{FDR} < 0.05$ ).

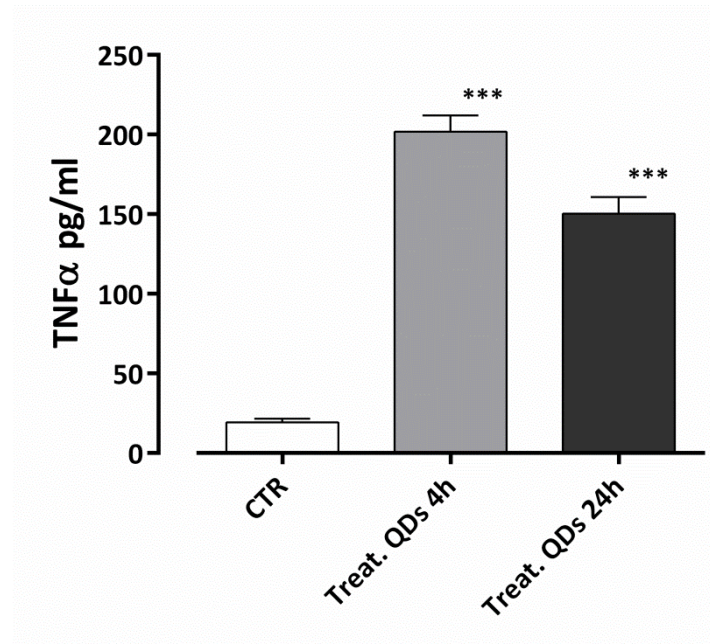
**a** THP-1 (Treat. 50  $\mu\text{g ml}^{-1}$  CdS QDs)



**b** THP-1 (Treat. 11.4  $\mu\text{g ml}^{-1}$  Cd(II))



**Figure S4** GO biological process enrichment analysis of the mRNAs modulated in THP-1 cells by Cd exposure. **a**, Treatment with 39  $\mu\text{g ml}^{-1}$  Cd as 50  $\mu\text{g ml}^{-1}$  CdS QDs. According to the GO enrichment analysis from PANTHER, the most significant changes were associated with the JAK/STAT signalling pathway, inflammatory response and calcium signalling. **b**, Treatment with 5  $\mu\text{g ml}^{-1}$  Cd as 11.4  $\mu\text{g ml}^{-1}$  Cd(II). The most significant changes were associated with inflammatory response and response to oxidative stress. Note: GO enrichment analysis were performed using PANTHER software ( $p < 0.001$  and  $\text{FDR} < 0.05$ ).



**Figure S5** *TNFα secretion in the culture media of THP-1 cells exposed to 50  $\mu\text{g ml}^{-1}$  of CdS QDs. After 4 and 24 h of treatment, TNFα was determined in the extracellular medium, as described in 'Experimental'. Data are means of three independent determinations  $\pm$  S.D. \*\*\* $p < 0.001$  vs. control (CTR), untreated cultures*

### S3 Supplementary Tables

**Table S1** Transcriptional regulation in HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs: comparison miRNAs vs mRNAs

| From miRNAs to mRNA               |                                                                |                                  |                |                                  |
|-----------------------------------|----------------------------------------------------------------|----------------------------------|----------------|----------------------------------|
| Process/Pathway                   | miRNA<br>(from data in<br>Paesano <i>et al.</i> <sup>1</sup> ) | miRNA regulation                 | mRNA target    | mRNA regulation<br>(RNAseq data) |
| Apoptosis                         | miR-34b                                                        | ↑                                | p53 response   | no significant                   |
|                                   | miR-149                                                        | ↓                                | AKT1           | no significant                   |
|                                   | miR-32                                                         | ↓                                | BIM            | no significant                   |
|                                   | miR-122-5p                                                     | ↓                                | BCL-W (BCL2L2) | no significant                   |
|                                   | miR-193b-5p                                                    | ↓                                | MCL1           | no significant                   |
|                                   | miR-15a -3p                                                    | ↑                                | BCL-2          | ↓                                |
|                                   | miR-195-5p                                                     | ↓                                |                |                                  |
|                                   | miR-92a-1-5p                                                   | ↑                                | FAF-1(FAS)     | no significant                   |
| From mRNA (RNAseq data) to miRNAs |                                                                |                                  |                |                                  |
| Process/pathway                   | mRNA                                                           | mRNA regulation<br>(RNAseq data) | miRNA          | miRNA<br>regulation              |
| RAS signalling                    | RASGRP1                                                        | ↑                                | miR-335-5p     | ↓                                |
|                                   |                                                                |                                  | miR-155-5p     | ↓                                |
| Calcium signalling<br>pathway     | PLCE1                                                          | ↑                                | miR-335-5p     | ↓                                |
|                                   |                                                                |                                  | miR-149-3p     | ↓                                |
|                                   |                                                                |                                  | miR-34b-3p     | ↑                                |
|                                   |                                                                |                                  | miR-155-5p     | ↓                                |
|                                   | RYR2                                                           | ↓                                | miR-335-5p     | ↓                                |
|                                   |                                                                |                                  | miR-548b-3p    | ↓                                |
|                                   | CAMK1D                                                         | ↑                                | miR-323a-3p    | ↓                                |
|                                   |                                                                |                                  | miR-195-5p     | ↓                                |
|                                   | CAMK2A                                                         | ↑                                | miR-149-3p     | ↓                                |
|                                   |                                                                |                                  | miR-126-5p     | ↓                                |
|                                   | CACNA1B                                                        | ↑                                | miR-335-5p     | ↓                                |
|                                   |                                                                |                                  | miR-17-3p      | ↓                                |
|                                   | CACNA1C                                                        | ↑                                | miR-218-5p     | ↓                                |
|                                   |                                                                |                                  | miR-133a-3p    | ↑                                |
|                                   | ATP2A3                                                         | ↓                                | miR-149-3p     | ↓                                |
|                                   |                                                                |                                  | miR-155-5p     | ↓                                |
|                                   |                                                                |                                  | miR-17-3p      | ↓                                |
|                                   |                                                                |                                  | miR-340-3p     | ↑                                |
|                                   | CALML6                                                         | ↓                                | miR-30a-5p     | ↑                                |
|                                   | PDE1A                                                          | ↑                                | miR-218-5p     | ↓                                |
|                                   |                                                                |                                  | miR-155-5p     | ↓                                |

**Table S2** Transcriptional regulation in THP-1 cells exposed to 39  $\mu\text{g ml}^{-1}$  Cd as 50  $\mu\text{g ml}^{-1}$  CdS QDs: comparison miRNAs vs mRNAs

| From miRNAs to mRNA               |                                                                |                                   |              |                                  |
|-----------------------------------|----------------------------------------------------------------|-----------------------------------|--------------|----------------------------------|
| Autophagy                         | miRNA<br>(from data in<br>Paesano <i>et al.</i> <sup>1</sup> ) | miRNA regulation                  | mRNA target  | mRNA regulation<br>(RNAseq data) |
| Induction                         | miR-101 - 3p                                                   | ↓                                 | MTOR         | no significant                   |
|                                   | miR-30a -5p                                                    | ↓                                 |              |                                  |
|                                   | miR-199a-3p                                                    | ↓                                 |              |                                  |
| Vescicle<br>nucleation            | miR-101-3p                                                     | ↓                                 | RAB5A        | no significant                   |
|                                   | miR-374a-5p                                                    | ↓                                 | UVRAG        | no significant                   |
|                                   | miR-30a-5p                                                     | ↓                                 | BECN1        | no significant                   |
| Vescicle<br>elongation            | miR-181a-5p                                                    | ↓                                 | ATG5         | no significant                   |
|                                   | miR-374a                                                       | ↓                                 |              |                                  |
|                                   | miR-30a-5p                                                     | ↓                                 | ATG4D        | no significant                   |
|                                   | miR-101-3p                                                     | ↓                                 |              |                                  |
| From mRNA (RNAseq data) to miRNAs |                                                                |                                   |              |                                  |
| Process/pathway                   | mRNA                                                           | mRNAs regulation<br>(RNAseq data) | miRNA        | miRNA regulation                 |
| JAK/STAT<br>pathway               | JAK3                                                           | ↓                                 | miR-29b-1-5p | ↑                                |
|                                   |                                                                |                                   | miR-222-3p   | ↓                                |
|                                   |                                                                |                                   | miR-335-5p   | ↓                                |
|                                   | STAT1                                                          | ↓                                 | miR-223-3p   | ↓                                |
|                                   |                                                                |                                   | miR-155-5p   | ↓                                |
|                                   |                                                                |                                   | miR-501-5p   | ↓                                |
|                                   |                                                                |                                   | miR-500a-5p  | ↓                                |
|                                   | STAT4                                                          | ↓                                 | miR-125a-3p  | ↓                                |
|                                   |                                                                |                                   | miR-24-3p    | ↓                                |
|                                   |                                                                |                                   | miR-449b-5p  | ↓                                |
|                                   | CXCL9                                                          | ↓                                 | miR-26b-5p   | ↓                                |
|                                   |                                                                |                                   | miR-335-5p   | ↓                                |
|                                   | CXCL10                                                         | ↓                                 | miR-21-5p    | ↓                                |
|                                   |                                                                |                                   | miR-550a-3p  | ↓                                |
|                                   |                                                                |                                   | miR-1285-3p  | ↓                                |
|                                   |                                                                |                                   | miR-15a-5p   | ↓                                |
|                                   | CXCL11                                                         | ↓                                 | miR-30a-5p   | ↓                                |
|                                   |                                                                |                                   | miR-30d-5p   | ↓                                |
|                                   |                                                                |                                   | miR-30c-5p   | ↓                                |
|                                   |                                                                |                                   | miR-30b-5p   | ↓                                |
| NFkappa (o K<br>greco)B           | IL12A                                                          | ↑                                 | miR-21-5p    | ↓                                |
|                                   |                                                                |                                   | miR-26b-5p   | ↓                                |
|                                   |                                                                |                                   | miR-10a-5p   | ↓                                |
|                                   | IL6                                                            | ↓                                 | let-7a-5p    | ↓                                |

|                    |         |   |             |   |
|--------------------|---------|---|-------------|---|
| p53 / APOPTOSIS    | IFNB1   | ↓ | miR-98-5p   | ↓ |
|                    |         |   | miR-335-5p  | ↓ |
|                    |         |   | let-7b-5p   | ↓ |
|                    |         |   | miR-26a-5p  | ↓ |
|                    | MYD88   | ↓ | miR-145-5p  | ↓ |
|                    |         |   | miR-155-5p  | ↓ |
|                    |         |   | miR-21-5p   | ↓ |
|                    |         |   | miR-149-5p  | ↓ |
|                    | GADD45B | ↓ | miR-1-3p    | ↓ |
|                    |         |   | miR-494-3p  | ↓ |
|                    |         |   | miR-101-3p  | ↓ |
|                    | GADD45G | ↓ | miR-181a-5p | ↓ |
|                    |         |   | let-7b-5p   | ↓ |
|                    |         |   | miR-146a-5p | ↓ |
| Inflammosome       | CASP1   | ↓ | miR-25-3p   | ↓ |
|                    |         |   | miR-17-5p   | ↓ |
|                    |         |   | miR-133a-3p | ↓ |
| Calcium signalling | NOXO1   | ↑ | miR-192-5p  | ↓ |
|                    |         |   | miR-215-5p  | ↓ |
|                    | CACNA1D | ↑ | miR-101-3p  | ↓ |
|                    |         |   | miR-146a-5p | ↓ |

**Table S3** Details of the various Cd treatments

| Cell Type | Treatment doses ( $\mu\text{g ml}^{-1}$ ) |                                            |                          |
|-----------|-------------------------------------------|--------------------------------------------|--------------------------|
|           | Cd                                        | as CdS QDs                                 | as Cd(II) <sup>a</sup>   |
| HepG2     | 2.3                                       | 3 (IC <sub>20</sub> )                      | 5.2                      |
| THP-1     | 5                                         | 6.4<br>(no significant modulation of mRNA) | 11.4 (IC <sub>20</sub> ) |
|           | 39                                        | 50 (IC <sub>20</sub> )                     | 89<br>(lethal)           |

**Note:**

<sup>a</sup>Cd(II) = CdSO<sub>4</sub> 8/3 - hydrate



**Table S4** mRNA modulated in HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs (RNAseq data)

| Gene                | Fold change | p-value | Gene                  | Fold change | p-value |
|---------------------|-------------|---------|-----------------------|-------------|---------|
| MROH7               | -605.43     | 0.011   | MFSD2B                | -2.79       | 0.045   |
| TRIM6-TRIM34        | -560.39     | 0.012   | CRHR1-IT1             | -2.78       | 0.050   |
| TNFRSF6B            | -485.97     | 0.044   | CYP2C8                | -2.78       | 0.027   |
| MIR621              | -202.69     | 0.050   | EFNB3                 | -2.73       | 0.048   |
| PCDHA12             | -165.53     | 0.041   | SLC52A1               | -2.68       | 0.049   |
| HSPE1-MOB4          | -156.53     | 0.043   | COLQ                  | -2.67       | 0.039   |
| ZASP                | -117.12     | 0.050   | C22orf24              | -2.66       | 0.035   |
| ZNF559-ZNF177       | -95.78      | 0.034   | NT5M                  | -2.65       | 0.038   |
| HSPB2-C11orf52      | -75.35      | 0.048   | KSR2                  | -2.64       | 0.049   |
| UGT1A4              | -73.80      | 0.050   | PZP                   | -2.59       | 0.031   |
| UGT1A7              | -59.75      | 0.021   | LOC100288181          | -2.59       | 0.049   |
| BGLAP               | -45.47      | 0.041   | PPP1R3F               | -2.58       | 0.050   |
| APOBEC3A_B          | -38.26      | 0.050   | LOC284454             | -2.56       | 0.047   |
| TM4SF19-TCTEX1D2    | -37.90      | 0.041   | CLUL1                 | -2.56       | 0.041   |
| PRR5-ARHGAP8        | -37.29      | 0.043   | TMEM158               | -2.51       | 0.047   |
| NT5C1B              | -35.12      | 0.050   | TEX40                 | -2.47       | 0.038   |
| TXNRD3NB            | -28.85      | 0.031   | EIF4EBP3              | -2.46       | 0.048   |
| TBC1D3              | -26.93      | 0.036   | MDFIC                 | -2.45       | 0.050   |
| CRHR1               | -25.89      | 0.050   | SNX32                 | -2.44       | 0.050   |
| PAK6                | -25.69      | 0.013   | CKMT1A                | -2.44       | 0.029   |
| STAG3L1             | -20.56      | 0.038   | C10orf131             | -2.43       | 0.026   |
| URGCP-MRPS24        | -15.16      | 0.050   | LOC650368             | -2.42       | 0.033   |
| SAA2-SAA4           | -14.61      | 0.049   | FOXP3                 | -2.42       | 0.024   |
| KLRC4-KLRK1,KLRK1   | -14.19      | 0.032   | TSPAN10               | -2.41       | 0.050   |
| SEPT5-GP1BB         | -10.56      | 0.045   | RARRES3               | -2.41       | 0.048   |
| MINOS1-NBL1         | -9.41       | 0.048   | C1QTNF9B              | -2.39       | 0.028   |
| TRIM73,TRIM74       | -8.74       | 0.027   | NAP1L3                | -2.38       | 0.051   |
| GPR75-ASB3          | -8.56       | 0.049   | LOC102723927          | -2.37       | 0.029   |
| MT1B                | -7.55       | 0.043   | SPHAR                 | -2.36       | 0.048   |
| IPO11-LRRC70,LRRC70 | -6.94       | 0.042   | TOLLIP-AS1            | -2.36       | 0.044   |
| MT1M                | -4.78       | 0.048   | C6orf164              | -2.33       | 0.019   |
| TMEM110-MUSTN1      | -4.24       | 0.033   | CLIC2                 | -2.33       | 0.040   |
| LINC00659           | -4.07       | 0.028   | IL12RB1               | -2.31       | 0.020   |
| TBC1D3C             | -3.85       | 0.050   | RIC3                  | -2.31       | 0.049   |
| RAD51L3-RFFL        | -3.49       | 0.025   | STARD8                | -2.31       | 0.047   |
| CD19                | -3.48       | 0.050   | SBK2                  | -2.29       | 0.050   |
| SNORA62             | -3.44       | 0.045   | FAM74A3               | -2.28       | 0.045   |
| SOX8                | -3.35       | 0.018   | PIP5KL1               | -2.28       | 0.020   |
| SLC25A48            | -3.31       | 0.044   | IMPG1                 | -2.26       | 0.050   |
| HEXA-AS1            | -3.25       | 0.042   | TYRP1                 | -2.25       | 0.048   |
| COL6A2              | -3.20       | 0.029   | TAS1R3                | -2.25       | 0.046   |
| FZD2                | -3.15       | 0.045   | ESPNP                 | -2.24       | 0.003   |
| YTHDF3-AS1          | -3.13       | 0.047   | DCAF13P3              | -2.22       | 0.037   |
| ZDHHC15             | -3.11       | 0.039   | KRT13                 | -2.21       | 0.050   |
| LOC256880           | -2.97       | 0.047   | KISS1                 | -2.21       | 0.026   |
| NKX3-2              | -2.96       | 0.045   | HLX                   | -2.20       | 0.047   |
| MEIOB               | -2.88       | 0.005   | LHFPL4                | -2.17       | 0.047   |
| ZG16                | -2.88       | 0.021   | WNT10B                | -2.16       | 0.050   |
| IFITM1              | -2.87       | 0.047   | ALOX12B               | -2.15       | 0.041   |
| FLJ31104            | -2.14       | 0.047   | RASGRP2               | 2.14        | 0.044   |
| SNORA43             | -2.14       | 0.011   | HIST1H2AK             | 2.15        | 0.041   |
| PLA2G1B             | -2.14       | 0.040   | MYO15A                | 2.15        | 0.040   |
| DNMT3L              | -2.14       | 0.011   | LOC101926975          | 2.15        | 0.024   |
| LOC101926896        | -2.11       | 0.029   | NEGR1                 | 2.15        | 0.017   |
| SLC43A3             | -2.11       | 0.013   | NBPF10                | 2.15        | 0.029   |
| GLUD1P7             | -2.11       | 0.028   | PTGES3L-AARSD1        | 2.15        | 0.027   |
| PLAC8L1             | -2.07       | 0.013   | SEPT5                 | 2.16        | 0.038   |
| RAI2                | -2.07       | 0.027   | GPR61                 | 2.16        | 0.027   |
| LOC101928738        | -2.07       | 0.050   | ADD2                  | 2.17        | 0.011   |
| LYRM9               | -2.07       | 0.035   | LINC00982             | 2.18        | 0.030   |
| DYX1C1-CCPG1        | -2.06       | 0.048   | TMEM75                | 2.19        | 0.011   |
| ROBO4               | -2.05       | 0.038   | LRRC75A               | 2.21        | 0.037   |
| ARTN                | -2.05       | 0.045   | MIR133A1HG            | 2.21        | 0.018   |
| PCNXL2              | -2.04       | 0.027   | FCAR                  | 2.22        | 0.031   |
| PAGE1               | -2.04       | 0.041   | LOC285847             | 2.22        | 0.010   |
| LRRC56              | -2.04       | 0.018   | LOC100499484-C9ORF174 | 2.23        | 0.036   |
| GPR83               | -2.03       | 0.019   | SCUBE3                | 2.23        | 0.006   |
| TLL2                | -2.03       | 0.028   | KCNJ13                | 2.24        | 0.033   |
| SYT8                | -2.03       | 0.019   | LOC100131496          | 2.24        | 0.039   |

|              |       |       |                   |        |       |
|--------------|-------|-------|-------------------|--------|-------|
| FGF17        | -2.03 | 0.039 | NSD1              | 2.57   | 0.028 |
| OR52N4       | -2.02 | 0.012 | SMG1P5            | 2.58   | 0.024 |
| C21orf49     | -2.02 | 0.011 | CXorf31           | 2.59   | 0.017 |
| MPPED2       | -2.01 | 0.038 | JAM2              | 2.60   | 0.039 |
| ZRANB2-AS2   | -2.01 | 0.039 | PLCE1             | 2.60   | 0.028 |
| CHI3L2       | -2.01 | 0.029 | LOC101929057      | 2.63   | 0.045 |
| BCO2         | -2.00 | 0.050 | ARHGEF33          | 2.64   | 0.013 |
| LOC644050    | -2.00 | 0.047 | LOC101929059      | 2.64   | 0.037 |
| SNORD89      | 2.01  | 0.029 | FYB               | 2.68   | 0.014 |
| IKZF3        | 2.01  | 0.024 | CCDC181           | 2.69   | 0.021 |
| GPR1-AS      | 2.01  | 0.019 | KIAA0319          | 2.74   | 0.019 |
| PTPRG-AS1    | 2.02  | 0.048 | LOC101927100      | 2.76   | 0.018 |
| KCNAB1       | 2.03  | 0.036 | RPS16P5           | 2.77   | 0.019 |
| LINC00501    | 2.03  | 0.042 | KLRD1             | 2.78   | 0.013 |
| LYPD6        | 2.03  | 0.017 | FAM72C            | 2.80   | 0.017 |
| BMP6         | 2.03  | 0.016 | FBN3              | 2.80   | 0.047 |
| NHS          | 2.05  | 0.008 | MIRLET7BHG        | 2.81   | 0.024 |
| JAZF1        | 2.06  | 0.022 | TMEM105           | 2.81   | 0.035 |
| SLC1A1       | 2.06  | 0.048 | MAMLD1            | 2.81   | 0.031 |
| NNAT         | 2.07  | 0.040 | FOXD4L1           | 2.83   | 0.039 |
| CLDND2       | 2.07  | 0.038 | LOC284581         | 2.84   | 0.037 |
| DDR2         | 2.07  | 0.046 | CYP7B1            | 3.25   | 0.008 |
| RASGRP1      | 2.07  | 0.039 | ITGB8             | 3.31   | 0.012 |
| KMO          | 2.08  | 0.019 | ERCC6-PGBD3       | 3.32   | 0.044 |
| IRF7         | 2.08  | 0.029 | ATP1B2            | 3.36   | 0.046 |
| CHRNA2       | 2.09  | 0.026 | TLR3              | 3.90   | 0.016 |
| CEP170P1     | 2.09  | 0.041 | NEDD8-MDP1        | 4.33   | 0.009 |
| DOCK4-AS1    | 2.10  | 0.011 | C8orf44-SGK3,SGK3 | 5.01   | 0.043 |
| PRR4         | 2.10  | 0.035 | RAB4B-EGLN2       | 5.54   | 0.023 |
| ZNF33BP1     | 2.10  | 0.008 | FSBP              | 5.99   | 0.012 |
| ANGPT2       | 2.11  | 0.026 | ABHD14A-ACY1      | 6.24   | 0.027 |
| HPGD         | 2.13  | 0.019 | SLMO2-ATP5E       | 6.39   | 0.020 |
| RHO          | 2.25  | 0.049 | ST20-MTHFS        | 7.25   | 0.018 |
| HYDIN        | 2.26  | 0.039 | ZNF816-ZNF321P    | 8.63   | 0.045 |
| KIAA0825     | 2.27  | 0.029 | UGT1A6            | 9.00   | 0.046 |
| RRS1-AS1     | 2.27  | 0.017 | H3F3A             | 9.34   | 0.044 |
| CD274        | 2.28  | 0.016 | ZNF625-ZNF20      | 9.75   | 0.016 |
| EDARADD      | 2.29  | 0.035 | ATP5J2-PTCD1      | 9.97   | 0.050 |
| C4orf36      | 2.29  | 0.048 | TMEM189-UBE2V1    | 10.29  | 0.029 |
| LOC101929829 | 2.30  | 0.038 | TMX2-CTNND1       | 10.51  | 0.043 |
| SSTR2        | 2.31  | 0.045 | C10orf32-ASMT     | 10.04  | 0.026 |
| VN1R2        | 2.32  | 0.005 | MIR1307           | 10.61  | 0.047 |
| ADD3-AS1     | 2.32  | 0.046 | MIR3652           | 10.79  | 0.039 |
| BCL2L14      | 2.33  | 0.021 | NT5C1B-RDH14      | 12.34  | 0.014 |
| ST7-OT4      | 2.33  | 0.038 | TRIM74            | 12.51  | 0.015 |
| TMEM86A      | 2.34  | 0.039 | FAM47E-STBD1      | 13.04  | 0.028 |
| SMIM5        | 2.34  | 0.020 | TICAM2            | 14.11  | 0.048 |
| FAM132A      | 2.35  | 0.044 | CCL14             | 14.65  | 0.049 |
| LRR6         | 2.36  | 0.031 | SNRPN             | 16.46  | 0.023 |
| PLCL2        | 2.37  | 0.010 | CNTNAP3P2         | 16.77  | 0.048 |
| VWA8-AS1     | 2.37  | 0.026 | EEF1E1-BLOC1S5    | 19.29  | 0.026 |
| GNN          | 2.37  | 0.019 | UBE2F-SCLY        | 20.05  | 0.013 |
| POPDC3       | 2.37  | 0.031 | SLC26A7           | 25.88  | 0.021 |
| SYT2         | 2.38  | 0.006 | TMEM256-PLSCR3    | 26.90  | 0.026 |
| F2RL2        | 2.39  | 0.045 | SCHIP1            | 27.59  | 0.027 |
| SLC7A11-AS1  | 2.40  | 0.008 | SRGAP2C           | 28.58  | 0.035 |
| CD37         | 2.40  | 0.003 | CKLF-CMTM1        | 35.28  | 0.008 |
| IL15RA       | 2.40  | 0.026 | UGT1A8            | 52.60  | 0.044 |
| SNCG         | 2.42  | 0.025 | UGT1A5            | 53.83  | 0.025 |
| ZNF665       | 2.42  | 0.020 | MIA-RAB4B         | 54.13  | 0.043 |
| SLC47A2      | 2.45  | 0.032 | UGT1A10           | 60.89  | 0.031 |
| LOC103171574 | 2.47  | 0.040 | UGT1A9            | 62.02  | 0.016 |
| GUCY1A2      | 2.48  | 0.022 | TSNAX-DISC1       | 70.91  | 0.049 |
| FCRLB        | 2.49  | 0.033 | ZFP91-CNTF        | 92.54  | 0.043 |
| PRR18        | 2.49  | 0.033 | RALGAPA1P         | 97.23  | 0.046 |
| CALML3-AS1   | 2.53  | 0.047 | INS-IGF2          | 98.95  | 0.036 |
| SNX20        | 2.53  | 0.022 | FKBP1A-SDCBP2     | 114.02 | 0.046 |
| FSIP2        | 2.53  | 0.048 | NBP9              | 115.69 | 0.037 |
| THRSP        | 2.54  | 0.040 | SPECC1L-ADORA2A   | 124.16 | 0.049 |
| ATP11A-AS1   | 2.55  | 0.032 | CORO7-PAM16       | 157.84 | 0.046 |
| NRXN2        | 2.55  | 0.049 | GCOM1             | 160.97 | 0.031 |
| LIM2         | 2.55  | 0.048 | PCDHA1            | 185.21 | 0.014 |

|             |        |       |               |     |       |
|-------------|--------|-------|---------------|-----|-------|
| PCDHA10     | 200.54 | 0.046 | BAGE5         | inf | 0.030 |
| MSTO2P      | 236.84 | 0.047 | BCL11B        | inf | 0.027 |
| PCDHA13     | 237.15 | 0.031 | BCMO1         | inf | 0.041 |
| PCDHA2      | 260.86 | 0.033 | BCORP1        | inf | 0.045 |
| PCDHAC1     | 287.17 | 0.044 | BECN1P1       | inf | 0.027 |
| MROH7-TTC4  | 300.93 | 0.027 | BIN3-IT1      | inf | 0.033 |
| PCDHA6      | 323.64 | 0.048 | BLK           | inf | 0.045 |
| PCDHA5      | 408.98 | 0.019 | BNC2          | inf | 0.023 |
| PCDHA4      | 427.06 | 0.041 | BPESC1        | inf | 0.028 |
| PCDHAC2     | 602.96 | 0.044 | BPIFB4        | inf | 0.017 |
| FPGT-TNNI3K | 648.27 | 0.030 | BRWD1-AS1     | inf | 0.033 |
| PCDHGA11    | 725.39 | 0.047 | BTBD6         | inf | 0.044 |
| PCDHGA9     | 829.36 | 0.041 | C11orf16      | inf | 0.016 |
| PCDHGB5     | 836.99 | 0.021 | C11orf91      | inf | 0.048 |
| PCDHGC5     | 837.25 | 0.030 | C11orf97      | inf | 0.045 |
| PCDHGB3     | 854.16 | 0.013 | C12orf56      | inf | 0.027 |
| AACSP1      | inf    | 0.049 | C12orf71      | inf | 0.011 |
| AANAT       | inf    | 0.016 | C12orf77      | inf | 0.024 |
| AARD        | inf    | 0.017 | C14orf132     | inf | 0.037 |
| ABCC5-AS1   | inf    | 0.046 | C14orf183     | inf | 0.010 |
| ABO         | inf    | 0.021 | C15orf27      | inf | 0.025 |
| ACCS        | inf    | 0.028 | C17orf64      | inf | 0.012 |
| ACE         | inf    | 0.021 | C18orf42      | inf | 0.030 |
| ACPT        | inf    | 0.025 | C19orf38      | inf | 0.046 |
| ACRBP       | inf    | 0.035 | C1orf177      | inf | 0.017 |
| ACRV1       | inf    | 0.049 | C1orf195      | inf | 0.014 |
| ACTL7A      | inf    | 0.019 | C1orf204      | inf | 0.043 |
| ACTL7B      | inf    | 0.026 | C1orf54       | inf | 0.038 |
| ADCY4       | inf    | 0.017 | C1orf95       | inf | 0.038 |
| ADIPOQ      | inf    | 0.032 | C1QL1         | inf | 0.012 |
| ADIPOQ-AS1  | inf    | 0.043 | C20orf144     | inf | 0.040 |
| ADORA3      | inf    | 0.020 | C20orf166-AS1 | inf | 0.034 |
| ADRA1A      | inf    | 0.042 | C20orf26      | inf | 0.007 |
| ADRB1       | inf    | 0.046 | C2orf91       | inf | 0.046 |
| AGBL4       | inf    | 0.009 | C3orf55       | inf | 0.044 |
| AIRN        | inf    | 0.022 | C4orf26       | inf | 0.041 |
| AJAP1       | inf    | 0.030 | C5orf60       | inf | 0.017 |
| AK5         | inf    | 0.040 | C6orf195      | inf | 0.023 |
| AK8         | inf    | 0.044 | C7orf65       | inf | 0.041 |
| ALDH1A3     | inf    | 0.009 | C9orf171      | inf | 0.025 |
| ALKBH3-AS1  | inf    | 0.021 | CA1           | inf | 0.050 |
| ALS2CL      | inf    | 0.027 | CACNA1B       | inf | 0.042 |
| AMER2       | inf    | 0.041 | CACNA1C       | inf | 0.020 |
| AMIGO2      | inf    | 0.017 | CACNA1C-AS2   | inf | 0.033 |
| ANAPC1P1    | inf    | 0.035 | CACNA1G-AS1   | inf | 0.038 |
| ANGPTL7     | inf    | 0.016 | CACNA2D2      | inf | 0.038 |
| ANK3        | inf    | 0.040 | CACNG6        | inf | 0.007 |
| ANKRD18B    | inf    | 0.033 | CAGE1         | inf | 0.032 |
| ANKRD18DP   | inf    | 0.007 | CALCB         | inf | 0.025 |
| ANKRD22     | inf    | 0.034 | CALCRL        | inf | 0.046 |
| ANKRD30B    | inf    | 0.016 | CALR3         | inf | 0.032 |
| ANKRD36BP2  | inf    | 0.049 | CALY          | inf | 0.030 |
| ANKRD62     | inf    | 0.016 | CAMK1D        | inf | 0.010 |
| ANP32AP1    | inf    | 0.030 | CAMK2A        | inf | 0.029 |
| APCDD1L-AS1 | inf    | 0.033 | CAPN8         | inf | 0.037 |
| APOBEC1     | inf    | 0.019 | CARD18        | inf | 0.018 |
| APOBEC4     | inf    | 0.037 | CASP14        | inf | 0.046 |
| ARHGAP25    | inf    | 0.013 | CATIP-AS1     | inf | 0.049 |
| ARHGEF37    | inf    | 0.041 | CATSPER4      | inf | 0.044 |
| ARHGEF38    | inf    | 0.026 | CBY3          | inf | 0.043 |
| ASAP1-IT1   | inf    | 0.023 | CC2D2B        | inf | 0.047 |
| ASB15       | inf    | 0.005 | CCDC136       | inf | 0.050 |
| ASCL2       | inf    | 0.026 | CCDC144B      | inf | 0.041 |
| ASCL3       | inf    | 0.026 | CCDC144CP     | inf | 0.023 |
| ASPN        | inf    | 0.011 | CCDC158       | inf | 0.034 |
| ATP11AUN    | inf    | 0.011 | CCDC169       | inf | 0.014 |
| ATP1B4      | inf    | 0.046 | CCDC3         | inf | 0.041 |
| ATP5L2      | inf    | 0.011 | CCDC71L       | inf | 0.046 |
| ATP8B5P     | inf    | 0.032 | CCDC80        | inf | 0.033 |
| B4GALNT2    | inf    | 0.023 | CCIN          | inf | 0.037 |
| BAGE,BAGE5  | inf    | 0.022 | CCL17         | inf | 0.010 |
| BAGE4       | inf    | 0.024 | CCM2L         | inf | 0.028 |

|               |     |       |             |     |       |
|---------------|-----|-------|-------------|-----|-------|
| CCNB3         | inf | 0.040 | DERL3       | inf | 0.047 |
| CCNI2         | inf | 0.049 | DLEU7-AS1   | inf | 0.038 |
| CCT8L2        | inf | 0.039 | DLG3-AS1    | inf | 0.026 |
| CD200R1       | inf | 0.019 | DMBX1       | inf | 0.035 |
| CD209         | inf | 0.027 | DNAH11      | inf | 0.006 |
| CD300E        | inf | 0.038 | DNAH6       | inf | 0.006 |
| CD3G          | inf | 0.049 | DNAH7       | inf | 0.016 |
| CD6           | inf | 0.017 | DNAJC27-AS1 | inf | 0.023 |
| CD80          | inf | 0.015 | DNM3        | inf | 0.039 |
| CD81          | inf | 0.039 | DPYD-AS1    | inf | 0.036 |
| CDC14C        | inf | 0.031 | DPYSL5      | inf | 0.043 |
| CDC42P3       | inf | 0.034 | DRD5        | inf | 0.033 |
| CDH9          | inf | 0.022 | DSCAM       | inf | 0.045 |
| CDK5R2        | inf | 0.026 | DUOX2       | inf | 0.047 |
| CDKL2         | inf | 0.049 | EBLN1       | inf | 0.035 |
| CEACAM16      | inf | 0.037 | ECEL1       | inf | 0.049 |
| CEACAM20      | inf | 0.029 | EDIL3       | inf | 0.018 |
| CEACAM5       | inf | 0.038 | EFCAB14-AS1 | inf | 0.012 |
| CEBPE         | inf | 0.041 | EFHB        | inf | 0.031 |
| CECR2         | inf | 0.028 | EGFLAM      | inf | 0.041 |
| CEND1         | inf | 0.042 | EHHADH-AS1  | inf | 0.035 |
| CES1P2        | inf | 0.013 | EHMT1-IT1   | inf | 0.028 |
| CETN4P        | inf | 0.016 | EN1         | inf | 0.035 |
| CHIC1         | inf | 0.047 | ENO1-AS1    | inf | 0.048 |
| CHRM1         | inf | 0.049 | ENTPD3      | inf | 0.045 |
| CHRM5         | inf | 0.032 | EPHB2       | inf | 0.040 |
| CHRNA2        | inf | 0.049 | EPHB3       | inf | 0.022 |
| CHST4         | inf | 0.013 | EPHB6       | inf | 0.048 |
| CILP          | inf | 0.039 | EPN2-AS1    | inf | 0.039 |
| CLCA3P        | inf | 0.031 | EPPIN       | inf | 0.039 |
| CLEC2B        | inf | 0.036 | ERAS        | inf | 0.017 |
| CMKLR1        | inf | 0.046 | ERVFRD-1    | inf | 0.023 |
| CNGA3         | inf | 0.040 | ESR1        | inf | 0.043 |
| CNGA4         | inf | 0.046 | EVI2A       | inf | 0.045 |
| CNIH3         | inf | 0.049 | EVI2B       | inf | 0.045 |
| CNTN2         | inf | 0.029 | EVPL        | inf | 0.031 |
| CNTN4         | inf | 0.029 | FAM106A     | inf | 0.046 |
| COL12A1       | inf | 0.014 | FAM129C     | inf | 0.017 |
| COL18A1-AS1   | inf | 0.048 | FAM134B     | inf | 0.038 |
| COL3A1        | inf | 0.021 | FAM153C     | inf | 0.046 |
| COX7A1        | inf | 0.029 | FAM157A     | inf | 0.030 |
| CPNE4         | inf | 0.031 | FAM170A     | inf | 0.049 |
| CPO           | inf | 0.047 | FAM180A     | inf | 0.013 |
| CRSP8P        | inf | 0.043 | FAM182A     | inf | 0.049 |
| CRYBB2        | inf | 0.016 | FAM183CP    | inf | 0.048 |
| CSF1R         | inf | 0.014 | FAM189A1    | inf | 0.015 |
| CSMD1         | inf | 0.044 | FAM196A     | inf | 0.015 |
| CST7          | inf | 0.006 | FAM19A2     | inf | 0.008 |
| CTB-12O2.1    | inf | 0.021 | FAM209A     | inf | 0.020 |
| CTD-2270F17.1 | inf | 0.044 | FAM217A     | inf | 0.035 |
| CTLA4         | inf | 0.036 | FAM221A     | inf | 0.028 |
| CTNNA3        | inf | 0.025 | FAM230B     | inf | 0.013 |
| CTSW          | inf | 0.038 | FAM35BP     | inf | 0.020 |
| CXCL11        | inf | 0.041 | FAM49A      | inf | 0.034 |
| CXorf21       | inf | 0.035 | FAM66A      | inf | 0.011 |
| CYLC2         | inf | 0.009 | FAM71D      | inf | 0.024 |
| CYP2B6        | inf | 0.040 | FAM83C-AS1  | inf | 0.039 |
| CYP2B7P       | inf | 0.038 | FAM90A1     | inf | 0.006 |
| CYP2C18       | inf | 0.010 | FBP2        | inf | 0.003 |
| CYP4B1        | inf | 0.048 | FCGR2A      | inf | 0.021 |
| CYP4F22       | inf | 0.046 | FEZ1        | inf | 0.018 |
| CYP4F30P      | inf | 0.046 | FEZF1       | inf | 0.038 |
| CYP4X1        | inf | 0.008 | FEZF1-AS1   | inf | 0.019 |
| DACT3-AS1     | inf | 0.049 | FFAR2       | inf | 0.038 |
| DAND5         | inf | 0.049 | FGF12       | inf | 0.023 |
| DCAF8L2       | inf | 0.047 | FGF14-AS2   | inf | 0.044 |
| DCDC1         | inf | 0.029 | FGF18       | inf | 0.010 |
| DCHS2         | inf | 0.049 | FGF21       | inf | 0.033 |
| DCLK2         | inf | 0.043 | FGFBP2      | inf | 0.016 |
| DCST1         | inf | 0.045 | FKBP9P1     | inf | 0.035 |
| DDX25         | inf | 0.043 | FKSG29      | inf | 0.028 |
| DENND2D       | inf | 0.017 | FLJ21408    | inf | 0.034 |

|           |     |       |             |     |       |
|-----------|-----|-------|-------------|-----|-------|
| FLJ27354  | inf | 0.029 | IFT27       | inf | 0.013 |
| FLJ31662  | inf | 0.039 | IGFL2       | inf | 0.044 |
| FLJ41200  | inf | 0.034 | IGSF5       | inf | 0.043 |
| FLJ41941  | inf | 0.047 | IGSF6       | inf | 0.022 |
| FLJ43879  | inf | 0.038 | INPP4B      | inf | 0.046 |
| FMOD      | inf | 0.045 | INSM2       | inf | 0.020 |
| FMR1-AS1  | inf | 0.026 | ISPD-AS1    | inf | 0.018 |
| FOXF2     | inf | 0.049 | ITGA9-AS1   | inf | 0.031 |
| FOXL2NB   | inf | 0.044 | ITK         | inf | 0.011 |
| FOXN3-AS2 | inf | 0.013 | ITPK1-AS1   | inf | 0.016 |
| FRMD7     | inf | 0.020 | JAG2        | inf | 0.029 |
| FSCN2     | inf | 0.016 | KCNB1       | inf | 0.016 |
| FSTL1     | inf | 0.013 | KCNJ16      | inf | 0.047 |
| FUT5      | inf | 0.044 | KCNJ4       | inf | 0.014 |
| FUT9      | inf | 0.050 | KCNJ5       | inf | 0.041 |
| GALNT8    | inf | 0.023 | KCNMB2      | inf | 0.014 |
| GDAP1L1   | inf | 0.030 | KCNQ5       | inf | 0.040 |
| GDPD2     | inf | 0.045 | KCNS3       | inf | 0.018 |
| GDPD4     | inf | 0.029 | KCTD16      | inf | 0.033 |
| GGTLC1    | inf | 0.021 | KEL         | inf | 0.030 |
| GH2       | inf | 0.035 | KIAA1210    | inf | 0.011 |
| GHR       | inf | 0.031 | KIAA2022    | inf | 0.038 |
| GJB3      | inf | 0.029 | KIRREL3     | inf | 0.030 |
| GJB6      | inf | 0.025 | KLF1        | inf | 0.039 |
| GJB7      | inf | 0.049 | KLF2        | inf | 0.019 |
| GLIS1     | inf | 0.044 | KLHL29      | inf | 0.049 |
| GLRA1     | inf | 0.024 | KLHL6       | inf | 0.028 |
| GNG13     | inf | 0.018 | KLK4        | inf | 0.050 |
| GOLGA8J   | inf | 0.035 | KLK7        | inf | 0.043 |
| GOLGA8R   | inf | 0.049 | KRT18P55    | inf | 0.029 |
| GPR111    | inf | 0.023 | KRT31       | inf | 0.034 |
| GPR114    | inf | 0.038 | KRT40       | inf | 0.041 |
| GPR132    | inf | 0.030 | KRT6C       | inf | 0.015 |
| GPR182    | inf | 0.045 | KRT7        | inf | 0.045 |
| GPR183    | inf | 0.008 | KRT73       | inf | 0.008 |
| GPR52     | inf | 0.021 | KRT8P41     | inf | 0.008 |
| GRIA3     | inf | 0.023 | KRTAP5-AS1  | inf | 0.025 |
| GRIK5     | inf | 0.049 | KY          | inf | 0.045 |
| GRIN2A    | inf | 0.041 | LAMB2P1     | inf | 0.039 |
| GSTM2P1   | inf | 0.022 | LAMB4       | inf | 0.037 |
| GSX2      | inf | 0.037 | LARGE-AS1   | inf | 0.042 |
| GUSBP3    | inf | 0.045 | LCE1B       | inf | 0.034 |
| HAS2-AS1  | inf | 0.038 | LCE1F       | inf | 0.028 |
| HCCAT3    | inf | 0.033 | LDHAL6B     | inf | 0.027 |
| HCN4      | inf | 0.016 | LEPREL1     | inf | 0.006 |
| HDC       | inf | 0.013 | LHFPL5      | inf | 0.021 |
| HDX       | inf | 0.013 | LHX2        | inf | 0.035 |
| HECW1     | inf | 0.030 | LIMCH1      | inf | 0.034 |
| HEPH      | inf | 0.022 | LINC00159   | inf | 0.032 |
| HERC2P10  | inf | 0.019 | LINC00202-1 | inf | 0.019 |
| HES5      | inf | 0.036 | LINC00202-2 | inf | 0.046 |
| HES7      | inf | 0.035 | LINC00244   | inf | 0.029 |
| HHIP      | inf | 0.047 | LINC00269   | inf | 0.030 |
| HIPK4     | inf | 0.031 | LINC00278   | inf | 0.040 |
| HIST1H2AL | inf | 0.048 | LINC00336   | inf | 0.041 |
| HIST1H3A  | inf | 0.020 | LINC00371   | inf | 0.019 |
| HIST1H4A  | inf | 0.025 | LINC00412   | inf | 0.015 |
| HIST2H2AB | inf | 0.022 | LINC00458   | inf | 0.049 |
| HIVEP3    | inf | 0.045 | LINC00470   | inf | 0.018 |
| HLA-DRB5  | inf | 0.013 | LINC00518   | inf | 0.035 |
| HLX-AS1   | inf | 0.018 | LINC00538   | inf | 0.011 |
| HMCN1     | inf | 0.008 | LINC00578   | inf | 0.036 |
| HNRNPA3P1 | inf | 0.036 | LINC00597   | inf | 0.010 |
| HNRNPCL2  | inf | 0.039 | LINC00616   | inf | 0.037 |
| HOXB7     | inf | 0.023 | LINC00622   | inf | 0.039 |
| HOXC8     | inf | 0.034 | LINC00624   | inf | 0.013 |
| HOXD3     | inf | 0.016 | LINC00670   | inf | 0.035 |
| HOXD4     | inf | 0.008 | LINC00700   | inf | 0.038 |
| HSP90AB4P | inf | 0.017 | LINC00845   | inf | 0.021 |
| HUS1B     | inf | 0.012 | LINC00853   | inf | 0.038 |
| IFI16     | inf | 0.020 | LINC00867   | inf | 0.032 |
| IFLTD1    | inf | 0.022 | LINC00896   | inf | 0.015 |

|              |     |       |                           |     |       |
|--------------|-----|-------|---------------------------|-----|-------|
| LINC00908    | inf | 0.015 | LOC101929372              | inf | 0.026 |
| LINC00935    | inf | 0.012 | LOC101929420              | inf | 0.047 |
| LINC00939    | inf | 0.030 | LOC101929452              | inf | 0.037 |
| LINC00942    | inf | 0.037 | LOC101929613              | inf | 0.025 |
| LINC00957    | inf | 0.015 | LOC101929696              | inf | 0.021 |
| LINC00961    | inf | 0.043 | LOC101929760              | inf | 0.035 |
| LINC00970    | inf | 0.022 | LOC102031319              | inf | 0.012 |
| LINC00987    | inf | 0.045 | LOC102546294              | inf | 0.045 |
| LINC01049    | inf | 0.027 | LOC102724246              | inf | 0.032 |
| LINC01099    | inf | 0.019 | LOC145845                 | inf | 0.045 |
| LINC01141    | inf | 0.027 | LOC148696                 | inf | 0.025 |
| LINC01212    | inf | 0.038 | LOC151475                 | inf | 0.014 |
| LINC01237    | inf | 0.036 | LOC151484                 | inf | 0.034 |
| LINC01258    | inf | 0.014 | LOC283038                 | inf | 0.047 |
| LINC01276    | inf | 0.015 | LOC284009                 | inf | 0.041 |
| LINC01285    | inf | 0.043 | LOC285696                 | inf | 0.005 |
| LINC01289    | inf | 0.048 | LOC286190                 | inf | 0.045 |
| LINC01338    | inf | 0.041 | LOC344967                 | inf | 0.047 |
| LINC01342    | inf | 0.011 | LOC400958                 | inf | 0.007 |
| LMF1-AS1     | inf | 0.006 | LOC402160                 | inf | 0.046 |
| LMO1         | inf | 0.025 | LOC440896                 | inf | 0.041 |
| LMOD1        | inf | 0.008 | LOC574538                 | inf | 0.030 |
| LOC100128006 | inf | 0.022 | LOC63930                  | inf | 0.047 |
| LOC100128885 | inf | 0.011 | LOC643355                 | inf | 0.015 |
| LOC100287072 | inf | 0.023 | LOC643441                 | inf | 0.031 |
| LOC100287225 | inf | 0.014 | LOC643711                 | inf | 0.037 |
| LOC100287846 | inf | 0.032 | LOC644669                 | inf | 0.031 |
| LOC100288814 | inf | 0.028 | LOC645434                 | inf | 0.013 |
| LOC100289092 | inf | 0.049 | LOC646938                 | inf | 0.026 |
| LOC100289473 | inf | 0.037 | LOC647859                 | inf | 0.037 |
| LOC100505592 | inf | 0.038 | LOC80154                  | inf | 0.037 |
| LOC100505918 | inf | 0.024 | LONRF2                    | inf | 0.021 |
| LOC100506142 | inf | 0.044 | LPHN3                     | inf | 0.032 |
| LOC100506371 | inf | 0.035 | LPPR4                     | inf | 0.022 |
| LOC100507387 | inf | 0.048 | LRP1B                     | inf | 0.042 |
| LOC101060524 | inf | 0.047 | LRRC15                    | inf | 0.038 |
| LOC101243545 | inf | 0.034 | LRRC2-AS1                 | inf | 0.042 |
| LOC101926897 | inf | 0.028 | LRRC32                    | inf | 0.042 |
| LOC101927069 | inf | 0.038 | LRRC4                     | inf | 0.021 |
| LOC101927123 | inf | 0.021 | LRRD1                     | inf | 0.040 |
| LOC101927150 | inf | 0.040 | LRRTM2                    | inf | 0.046 |
| LOC101927196 | inf | 0.042 | LSMEM2                    | inf | 0.015 |
| LOC101927230 | inf | 0.030 | LYZL6                     | inf | 0.029 |
| LOC101927310 | inf | 0.031 | MACROD2-AS1               | inf | 0.007 |
| LOC101927571 | inf | 0.029 | MAEL                      | inf | 0.042 |
| LOC101927642 | inf | 0.020 | MAFA                      | inf | 0.006 |
| LOC101927678 | inf | 0.019 | MAGEA10-<br>MAGEA5,MAGEA5 | inf | 0.043 |
| LOC101927698 | inf | 0.018 | MAGEA5                    | inf | 0.047 |
| LOC101927780 | inf | 0.050 | MAGI1-AS1                 | inf | 0.006 |
| LOC101927817 | inf | 0.009 | MALL                      | inf | 0.042 |
| LOC101927839 | inf | 0.006 | MAP1LC3A                  | inf | 0.045 |
| LOC101927843 | inf | 0.013 | MAP3K19                   | inf | 0.047 |
| LOC101927901 | inf | 0.037 | MAP3K7CL                  | inf | 0.031 |
| LOC101927948 | inf | 0.038 | MAPT-IT1                  | inf | 0.031 |
| LOC101928008 | inf | 0.029 | MB                        | inf | 0.033 |
| LOC101928075 | inf | 0.018 | MCHR2                     | inf | 0.021 |
| LOC101928107 | inf | 0.034 | MEG9                      | inf | 0.042 |
| LOC101928205 | inf | 0.048 | MGC32805                  | inf | 0.015 |
| LOC101928269 | inf | 0.040 | MGC34796                  | inf | 0.050 |
| LOC101928437 | inf | 0.011 | MGC45922                  | inf | 0.007 |
| LOC101928567 | inf | 0.014 | MIAT                      | inf | 0.015 |
| LOC101928708 | inf | 0.043 | MICALCL                   | inf | 0.025 |
| LOC101928744 | inf | 0.019 | MIR100HG                  | inf | 0.026 |
| LOC101928782 | inf | 0.037 | MIR1257                   | inf | 0.037 |
| LOC101928844 | inf | 0.018 | MIR135A1                  | inf | 0.043 |
| LOC101928855 | inf | 0.026 | MIR143HG                  | inf | 0.031 |
| LOC101928861 | inf | 0.014 | MIR181A1HG                | inf | 0.012 |
| LOC101928886 | inf | 0.040 | MIR26A2                   | inf | 0.044 |
| LOC101929010 | inf | 0.029 | MIR34A                    | inf | 0.045 |
| LOC101929125 | inf | 0.017 | MIR4697HG                 | inf | 0.044 |
| LOC101929259 | inf | 0.034 | MIR4800                   | inf | 0.035 |

|           |     |       |                    |     |       |
|-----------|-----|-------|--------------------|-----|-------|
| MIR5047   | inf | 0.019 | PCP2               | inf | 0.037 |
| MIR5194   | inf | 0.050 | PDE1A              | inf | 0.016 |
| MIR570    | inf | 0.040 | PDILT              | inf | 0.048 |
| MIR589    | inf | 0.009 | PEX7               | inf | 0.030 |
| MIR637    | inf | 0.014 | PGAM4              | inf | 0.050 |
| MIR647    | inf | 0.020 | PGLYRP1            | inf | 0.029 |
| MIR8075   | inf | 0.010 | PHACTR1            | inf | 0.037 |
| MIR941-1  | inf | 0.035 | PHF21B             | inf | 0.025 |
| MKNK1-AS1 | inf | 0.011 | PIK3R6             | inf | 0.046 |
| MKRN9P    | inf | 0.031 | PIP5K1P1           | inf | 0.031 |
| MME       | inf | 0.021 | PITX3              | inf | 0.049 |
| MMP13     | inf | 0.024 | PKD1L3             | inf | 0.031 |
| MMP21     | inf | 0.041 | PKD2L1             | inf | 0.020 |
| MOBP      | inf | 0.039 | PLA2G4D            | inf | 0.035 |
| MRC1      | inf | 0.019 | PLA2G7             | inf | 0.026 |
| MRV11-AS1 | inf | 0.049 | PLAC4              | inf | 0.024 |
| MS4A15    | inf | 0.048 | PLCB4              | inf | 0.015 |
| MTNR1A    | inf | 0.037 | PLET1              | inf | 0.015 |
| MTRNR2L3  | inf | 0.038 | PMEPA1             | inf | 0.038 |
| MTRNR2L4  | inf | 0.046 | PNLDC1             | inf | 0.035 |
| MUC2      | inf | 0.035 | PNMA2              | inf | 0.018 |
| MUM1L1    | inf | 0.010 | PNMA3              | inf | 0.029 |
| MYADML2   | inf | 0.027 | POU3F2             | inf | 0.046 |
| MYBPC3    | inf | 0.025 | POU5F1P4           | inf | 0.022 |
| MYH6      | inf | 0.012 | PPIAP30            | inf | 0.033 |
| MYZAP     | inf | 0.048 | PPP1R14A           | inf | 0.012 |
| NALCN-AS1 | inf | 0.040 | PRAM1              | inf | 0.041 |
| NAT8B     | inf | 0.017 | PRDM7              | inf | 0.027 |
| NDP       | inf | 0.046 | PRG4               | inf | 0.043 |
| NEBL      | inf | 0.010 | PRKACG             | inf | 0.032 |
| NECAB1    | inf | 0.031 | PRM2               | inf | 0.040 |
| NECAB2    | inf | 0.048 | PRND               | inf | 0.037 |
| NELL2     | inf | 0.021 | PRR27              | inf | 0.011 |
| NEUROD2   | inf | 0.019 | PRRC2A             | inf | 0.047 |
| NKAIN4    | inf | 0.049 | PRUNE2             | inf | 0.020 |
| NLRP3     | inf | 0.027 | PSG4               | inf | 0.050 |
| NMRK2     | inf | 0.043 | PSG6               | inf | 0.028 |
| NOVA1     | inf | 0.042 | PSG9               | inf | 0.030 |
| NOX1      | inf | 0.028 | PSPN               | inf | 0.048 |
| NR2E3     | inf | 0.048 | PTENP1             | inf | 0.038 |
| NR4A2     | inf | 0.033 | PTGER4P2-CDK2AP2P2 | inf | 0.036 |
| NRG2      | inf | 0.029 | PTPRZ1             | inf | 0.026 |
| NSG1      | inf | 0.033 | PTX4               | inf | 0.030 |
| NTS       | inf | 0.046 | RAPGEF4-AS1        | inf | 0.045 |
| NUP210L   | inf | 0.048 | RASGRP4            | inf | 0.045 |
| NXF4      | inf | 0.049 | RBMV2FP            | inf | 0.018 |
| OASL      | inf | 0.041 | REREP3             | inf | 0.037 |
| OCIAD2    | inf | 0.037 | RGS16              | inf | 0.035 |
| OGN       | inf | 0.028 | RGS21              | inf | 0.011 |
| OLFM4     | inf | 0.019 | RGS9               | inf | 0.019 |
| OLIG3     | inf | 0.044 | RHCG               | inf | 0.044 |
| OLR1      | inf | 0.013 | RILAD1             | inf | 0.049 |
| OMD       | inf | 0.017 | RNASE13            | inf | 0.042 |
| OPRD1     | inf | 0.037 | RNASEH2B-AS1       | inf | 0.037 |
| OR11H4    | inf | 0.037 | RNF152             | inf | 0.033 |
| OR2A4     | inf | 0.037 | RNF186             | inf | 0.027 |
| OR5B12    | inf | 0.035 | RNF222             | inf | 0.050 |
| OR6B2     | inf | 0.037 | ROBO3              | inf | 0.018 |
| OR7E12P   | inf | 0.049 | RPEL1              | inf | 0.014 |
| OR8S1     | inf | 0.038 | RPL21P44           | inf | 0.045 |
| OXCT1-AS1 | inf | 0.038 | RPL3L              | inf | 0.036 |
| P2RX2     | inf | 0.028 | RPRML              | inf | 0.048 |
| P2RX6     | inf | 0.038 | RRH                | inf | 0.035 |
| P2RY12    | inf | 0.018 | RS1                | inf | 0.032 |
| PA2G4P4   | inf | 0.015 | RSPH6A             | inf | 0.037 |
| PACRG     | inf | 0.047 | RYR1               | inf | 0.049 |
| PAK7      | inf | 0.019 | SASH3              | inf | 0.030 |
| PBOV1     | inf | 0.039 | SCARNA6            | inf | 0.049 |
| PCDH19    | inf | 0.040 | SCN5A              | inf | 0.043 |
| PCDH818   | inf | 0.035 | SCNN1G             | inf | 0.034 |
| PCDH819P  | inf | 0.021 | SCUBE2             | inf | 0.043 |
| PCDHGB8P  | inf | 0.026 | SDK2               | inf | 0.035 |

|               |     |       |            |     |       |
|---------------|-----|-------|------------|-----|-------|
| SEC14L3       | inf | 0.032 | TAS2R19    | inf | 0.038 |
| SELE          | inf | 0.019 | TAS2R30    | inf | 0.048 |
| SELPLG        | inf | 0.046 | TAS2R46    | inf | 0.021 |
| SERPINB9P1    | inf | 0.020 | TCAM1P     | inf | 0.042 |
| SETSIP        | inf | 0.047 | TCAP       | inf | 0.047 |
| SFTPB         | inf | 0.029 | TCF24      | inf | 0.031 |
| SH3PXD2A-AS1  | inf | 0.036 | TCP10L2    | inf | 0.033 |
| SHANK2-AS1    | inf | 0.009 | TCP11      | inf | 0.020 |
| SHISA7        | inf | 0.030 | TDO2       | inf | 0.028 |
| SIGLEC8       | inf | 0.035 | TEKT4      | inf | 0.013 |
| SIPA1L2       | inf | 0.036 | TENM3      | inf | 0.003 |
| SKOR1         | inf | 0.036 | TEX21P     | inf | 0.028 |
| SLC17A7       | inf | 0.019 | TEX41      | inf | 0.048 |
| SLC22A10      | inf | 0.047 | TFAMP1     | inf | 0.035 |
| SLC25A2       | inf | 0.045 | TFCP2L1    | inf | 0.022 |
| SLC25A52      | inf | 0.030 | TFF1       | inf | 0.048 |
| SLC26A4-AS1   | inf | 0.049 | THEMIS     | inf | 0.020 |
| SLC2A7        | inf | 0.003 | TIMD4      | inf | 0.031 |
| SLC30A2       | inf | 0.049 | TLR7       | inf | 0.046 |
| SLC3A1        | inf | 0.045 | TLR9       | inf | 0.047 |
| SLC46A3       | inf | 0.032 | TMEM125    | inf | 0.014 |
| SLC6A16       | inf | 0.029 | TMEM155    | inf | 0.037 |
| SLC6A19       | inf | 0.035 | TMEM204    | inf | 0.037 |
| SLC7A10       | inf | 0.045 | TMEM236    | inf | 0.030 |
| SLCO1A2       | inf | 0.046 | TMEM240    | inf | 0.038 |
| SLCO1B3       | inf | 0.008 | TMEM262    | inf | 0.048 |
| SMCR5         | inf | 0.038 | TMEM71     | inf | 0.031 |
| SNAP91        | inf | 0.033 | TMEM88B    | inf | 0.033 |
| SNCA          | inf | 0.031 | TMPRSS7    | inf | 0.020 |
| SNCB          | inf | 0.045 | TMSB15A    | inf | 0.032 |
| SND1-IT1      | inf | 0.049 | TNFSF8     | inf | 0.038 |
| SNORA1        | inf | 0.019 | TNNI3K     | inf | 0.009 |
| SNORA2A       | inf | 0.049 | TPTE       | inf | 0.005 |
| SNORA47       | inf | 0.026 | TREM1      | inf | 0.023 |
| SNORA71C      | inf | 0.035 | TRIM42     | inf | 0.021 |
| SNORA74A      | inf | 0.050 | TRIM63     | inf | 0.033 |
| SNORD102      | inf | 0.025 | TRIM7      | inf | 0.024 |
| SNORD116-21   | inf | 0.038 | TRIM9      | inf | 0.048 |
| SNORD116-4    | inf | 0.023 | TRPM5      | inf | 0.022 |
| SNORD35A      | inf | 0.035 | TSHR       | inf | 0.015 |
| SNORD36A      | inf | 0.022 | TSP0       | inf | 0.033 |
| SNORD58C      | inf | 0.010 | TSPYL6     | inf | 0.024 |
| SNORD86       | inf | 0.011 | TTC21B-AS1 | inf | 0.047 |
| SNORD9        | inf | 0.008 | TTC36      | inf | 0.030 |
| SOHLH2        | inf | 0.019 | TTL2       | inf | 0.034 |
| SOX10         | inf | 0.025 | ULK2       | inf | 0.032 |
| SOX2          | inf | 0.048 | UNC45B     | inf | 0.047 |
| SPACA4        | inf | 0.013 | UNC5A      | inf | 0.032 |
| SPAG6         | inf | 0.050 | UNC5B-AS1  | inf | 0.028 |
| SPANXN5       | inf | 0.032 | UTS2B      | inf | 0.033 |
| SPATA9        | inf | 0.036 | VAT1L      | inf | 0.017 |
| SPDYE8P       | inf | 0.048 | VEGFC      | inf | 0.037 |
| SPINK6        | inf | 0.033 | VIM        | inf | 0.048 |
| SPNS3         | inf | 0.023 | VIPR1      | inf | 0.048 |
| SPRNP1        | inf | 0.036 | VN1R5      | inf | 0.040 |
| SPTBN4        | inf | 0.036 | VPREB3     | inf | 0.029 |
| ST8SIA1       | inf | 0.041 | VSTM2B     | inf | 0.044 |
| STAT4         | inf | 0.025 | VSTM2L     | inf | 0.026 |
| STEAP2-AS1    | inf | 0.039 | WDR38      | inf | 0.014 |
| STK31         | inf | 0.026 | WEE2-AS1   | inf | 0.043 |
| STON1-GTF2A1L | inf | 0.047 | WIPF1      | inf | 0.010 |
| STOX2         | inf | 0.044 | WLS        | inf | 0.043 |
| STX11         | inf | 0.045 | WNT4       | inf | 0.032 |
| SUGT1P3       | inf | 0.049 | WNT6       | inf | 0.028 |
| SVOP          | inf | 0.015 | WTH3DI     | inf | 0.017 |
| SVOPL         | inf | 0.030 | XCL2       | inf | 0.025 |
| SYCP2L        | inf | 0.048 | XG         | inf | 0.044 |
| SYNGAP1       | inf | 0.036 | XIRP1      | inf | 0.048 |
| SYT12         | inf | 0.024 | XKRX       | inf | 0.028 |
| SYT9          | inf | 0.010 | YBX3P1     | inf | 0.046 |
| TACR2         | inf | 0.043 | YPEL4      | inf | 0.045 |
| TAF7L         | inf | 0.042 | ZACN       | inf | 0.041 |



|                |      |       |             |      |       |
|----------------|------|-------|-------------|------|-------|
| ZAR1L          | inf  | 0.025 | BTN1A1      | -inf | 0.022 |
| ZBTB20-AS1     | inf  | 0.017 | BTNL9       | -inf | 0.032 |
| ZBTB32         | inf  | 0.046 | BZRAP1      | -inf | 0.050 |
| ZEB2           | inf  | 0.027 | C10orf67    | -inf | 0.039 |
| ZFHx4-AS1      | inf  | 0.036 | C11orf63    | -inf | 0.037 |
| ZFP3           | inf  | 0.036 | C14orf178   | -inf | 0.049 |
| ZFP42          | inf  | 0.029 | C14orf182   | -inf | 0.032 |
| ZFPM2          | inf  | 0.012 | C15orf56    | -inf | 0.020 |
| ZNF295-AS1     | inf  | 0.017 | C16orf96    | -inf | 0.044 |
| ZNF470         | inf  | 0.011 | C17orf47    | -inf | 0.026 |
| ZNF471         | inf  | 0.036 | C17orf78    | -inf | 0.018 |
| ZNF518B        | inf  | 0.016 | C18orf61    | -inf | 0.033 |
| ZNF534         | inf  | 0.046 | C19orf84    | -inf | 0.039 |
| ZNF705D        | inf  | 0.034 | C1orf189    | -inf | 0.041 |
| ZNF716         | inf  | 0.026 | C1orf21     | -inf | 0.047 |
| ZNF835         | inf  | 0.011 | C1orf228    | -inf | 0.032 |
| ZNRF3-AS1      | inf  | 0.046 | C1orf234    | -inf | 0.010 |
| ZSCAN10        | inf  | 0.041 | C1QTNF5     | -inf | 0.048 |
| ZSCAN5B        | inf  | 0.016 | C20orf202   | -inf | 0.039 |
| ABI3BP         | -inf | 0.045 | C21orf15    | -inf | 0.032 |
| ACR            | -inf | 0.032 | C2orf61     | -inf | 0.022 |
| ACSBG2         | -inf | 0.033 | C3orf49     | -inf | 0.023 |
| ACSM4          | -inf | 0.035 | C5orf49     | -inf | 0.045 |
| ACTG2          | -inf | 0.026 | C5orf56     | -inf | 0.010 |
| ACTL6B         | -inf | 0.046 | C6orf165    | -inf | 0.014 |
| ADAM33         | -inf | 0.028 | C9orf84     | -inf | 0.033 |
| ADAMTS18       | -inf | 0.032 | CACNA1G     | -inf | 0.049 |
| ADIG           | -inf | 0.035 | CALCR       | -inf | 0.010 |
| AFAP1L2        | -inf | 0.032 | CALML6      | -inf | 0.035 |
| AGAP9          | -inf | 0.045 | CAND0.11    | -inf | 0.020 |
| ALAS2          | -inf | 0.005 | CAPNS2      | -inf | 0.031 |
| ALDH1L1-AS1    | -inf | 0.037 | CASC15      | -inf | 0.046 |
| ALDH3B2        | -inf | 0.018 | CBR3        | -inf | 0.047 |
| ALPP           | -inf | 0.041 | CCDC153     | -inf | 0.048 |
| AMTN           | -inf | 0.025 | CCDC19      | -inf | 0.045 |
| ANKRD20A11P    | -inf | 0.049 | CCDC83      | -inf | 0.039 |
| ANKRD26P1      | -inf | 0.026 | CCL26       | -inf | 0.022 |
| ANKRD35        | -inf | 0.026 | CCR10       | -inf | 0.029 |
| ANKRD45        | -inf | 0.022 | CCR4        | -inf | 0.043 |
| ANP32C         | -inf | 0.037 | CCRL2       | -inf | 0.007 |
| ANXA1          | -inf | 0.037 | CD163       | -inf | 0.039 |
| AOX2P          | -inf | 0.031 | CD79B       | -inf | 0.042 |
| AR             | -inf | 0.025 | CD93        | -inf | 0.042 |
| ARHGAP19-SLIT1 | -inf | 0.010 | CDH18       | -inf | 0.013 |
| ARHGAP27       | -inf | 0.036 | CDH19       | -inf | 0.026 |
| ARHGAP6        | -inf | 0.015 | CDX2        | -inf | 0.041 |
| ARHGAP9        | -inf | 0.029 | CEACAM8     | -inf | 0.036 |
| ARSF           | -inf | 0.044 | CECR7       | -inf | 0.049 |
| ASAP1-IT2      | -inf | 0.044 | CELSR3-AS1  | -inf | 0.045 |
| ASIC3          | -inf | 0.037 | CFB         | -inf | 0.049 |
| ATP1A2         | -inf | 0.037 | CGA         | -inf | 0.039 |
| ATP2C2         | -inf | 0.014 | CGB         | -inf | 0.049 |
| AZU1           | -inf | 0.047 | CGB7        | -inf | 0.017 |
| B3GALT1        | -inf | 0.028 | CHODL       | -inf | 0.026 |
| B3GNT5         | -inf | 0.044 | CHRD1       | -inf | 0.046 |
| B3GNT6         | -inf | 0.039 | CHRM4       | -inf | 0.048 |
| BAALC          | -inf | 0.007 | CHRNA6      | -inf | 0.049 |
| BARX1          | -inf | 0.048 | CHRNA9      | -inf | 0.013 |
| BCAR4          | -inf | 0.035 | CIART       | -inf | 0.049 |
| BCL11A         | -inf | 0.050 | CLCNKB      | -inf | 0.039 |
| BCL6B          | -inf | 0.029 | CLEC18C     | -inf | 0.011 |
| BCYRN1         | -inf | 0.047 | CLEC4C      | -inf | 0.050 |
| BEND2          | -inf | 0.048 | CLEC4E      | -inf | 0.048 |
| BEND5          | -inf | 0.048 | CLMP        | -inf | 0.026 |
| BEST2          | -inf | 0.040 | CLRN1-AS1   | -inf | 0.025 |
| BEX5           | -inf | 0.041 | CLSTN2      | -inf | 0.046 |
| BMP2           | -inf | 0.039 | CMA1        | -inf | 0.037 |
| BMP3           | -inf | 0.050 | CNDP1       | -inf | 0.018 |
| BOK-AS1        | -inf | 0.037 | CNPY1       | -inf | 0.014 |
| BPIFB1         | -inf | 0.040 | COL18A1-AS2 | -inf | 0.026 |
| BTC            | -inf | 0.046 | COL19A1     | -inf | 0.035 |
| BTK            | -inf | 0.038 | COL21A1     | -inf | 0.030 |

|               |      |       |              |      |       |
|---------------|------|-------|--------------|------|-------|
| COL4A1        | -inf | 0.042 | FBXL7        | -inf | 0.023 |
| COL6A6        | -inf | 0.039 | FBXO15       | -inf | 0.035 |
| COL9A1        | -inf | 0.035 | FBXO40       | -inf | 0.045 |
| CPNE5         | -inf | 0.029 | FCAMR        | -inf | 0.010 |
| CPNE9         | -inf | 0.040 | FFAR4        | -inf | 0.015 |
| CR1           | -inf | 0.032 | FLG2         | -inf | 0.046 |
| CREG2         | -inf | 0.043 | FLJ36777     | -inf | 0.038 |
| CRYGC         | -inf | 0.030 | FLJ37505     | -inf | 0.046 |
| CSMD2         | -inf | 0.007 | FLJ38576     | -inf | 0.025 |
| CSNK2A3       | -inf | 0.049 | FLJ42351     | -inf | 0.018 |
| CST5          | -inf | 0.046 | FLT4         | -inf | 0.031 |
| CT55          | -inf | 0.044 | FOLR4        | -inf | 0.019 |
| CTAGE4,CTAGE8 | -inf | 0.036 | FOXD1        | -inf | 0.042 |
| CTAGE8        | -inf | 0.041 | FRMPD1       | -inf | 0.027 |
| CTB-113P19.1  | -inf | 0.023 | FRMPD3       | -inf | 0.026 |
| CUX2          | -inf | 0.019 | FRZB         | -inf | 0.035 |
| CXADRP2       | -inf | 0.050 | FXYD3        | -inf | 0.025 |
| CXCL10        | -inf | 0.038 | GABRB2       | -inf | 0.028 |
| CXCR5         | -inf | 0.047 | GABRD        | -inf | 0.035 |
| CXorf36       | -inf | 0.014 | GABRR2       | -inf | 0.023 |
| CXorf65       | -inf | 0.026 | GALNT15      | -inf | 0.041 |
| CYP17A1       | -inf | 0.037 | GALR3        | -inf | 0.037 |
| CYS1          | -inf | 0.023 | GAP43        | -inf | 0.045 |
| DCAF12L2      | -inf | 0.038 | GATA6-AS1    | -inf | 0.018 |
| DCHS1         | -inf | 0.044 | GBP6         | -inf | 0.046 |
| DCN           | -inf | 0.011 | GBP7         | -inf | 0.048 |
| DCTN1-AS1     | -inf | 0.020 | GCGR         | -inf | 0.043 |
| DEFA4         | -inf | 0.005 | GNDF-AS1     | -inf | 0.048 |
| DEFA6         | -inf | 0.028 | GFY          | -inf | 0.016 |
| DGCR9         | -inf | 0.048 | GIPC3        | -inf | 0.039 |
| DIO2          | -inf | 0.038 | GJB4         | -inf | 0.014 |
| DIRAS2        | -inf | 0.043 | GJD4         | -inf | 0.025 |
| DKFZP434A062  | -inf | 0.013 | GLB1L3       | -inf | 0.049 |
| DLL1          | -inf | 0.020 | GNA15        | -inf | 0.032 |
| DNAJB5-AS1    | -inf | 0.025 | GNAO1        | -inf | 0.019 |
| DOC2GP        | -inf | 0.015 | GOLGA8DP     | -inf | 0.029 |
| DPEP2         | -inf | 0.011 | GOLGA8K      | -inf | 0.046 |
| DPRX          | -inf | 0.011 | GOLGA8O      | -inf | 0.007 |
| DRAXIN        | -inf | 0.019 | GOLGA8S      | -inf | 0.023 |
| EGFEM1P       | -inf | 0.029 | GP6          | -inf | 0.036 |
| EGFLAM-AS4    | -inf | 0.027 | GPR34        | -inf | 0.046 |
| EMB           | -inf | 0.048 | GPR4         | -inf | 0.011 |
| EPHA3         | -inf | 0.029 | GPR45        | -inf | 0.017 |
| EPHA8         | -inf | 0.041 | GPR78        | -inf | 0.042 |
| EPHX3         | -inf | 0.031 | GRAMD1C      | -inf | 0.042 |
| ERVV-2        | -inf | 0.020 | GRAPL        | -inf | 0.016 |
| EYA1          | -inf | 0.038 | GRIA2        | -inf | 0.048 |
| EYA4          | -inf | 0.039 | GRID2IP      | -inf | 0.043 |
| F9            | -inf | 0.041 | GRIK1-AS2    | -inf | 0.011 |
| FAM109B       | -inf | 0.021 | GRK1         | -inf | 0.046 |
| FAM110D       | -inf | 0.040 | GRM2         | -inf | 0.050 |
| FAM124B       | -inf | 0.046 | GRPR         | -inf | 0.012 |
| FAM132B       | -inf | 0.014 | GSTT2,GSTT2B | -inf | 0.050 |
| FAM150A       | -inf | 0.037 | GSTT2B       | -inf | 0.046 |
| FAM154A       | -inf | 0.023 | GUCA2A       | -inf | 0.022 |
| FAM163A       | -inf | 0.017 | GUCY2EP      | -inf | 0.041 |
| FAM169B       | -inf | 0.039 | GVINP1       | -inf | 0.043 |
| FAM179A       | -inf | 0.030 | GYS2         | -inf | 0.045 |
| FAM183A       | -inf | 0.034 | HAPLN2       | -inf | 0.013 |
| FAM189A2      | -inf | 0.041 | HAS2         | -inf | 0.015 |
| FAM225A       | -inf | 0.040 | HBE1         | -inf | 0.041 |
| FAM26E        | -inf | 0.034 | HBZ          | -inf | 0.046 |
| FAM27C        | -inf | 0.022 | HCRT         | -inf | 0.050 |
| FAM50B        | -inf | 0.048 | HHLA2        | -inf | 0.018 |
| FAM57B        | -inf | 0.044 | HIF1A-AS1    | -inf | 0.018 |
| FAM69C        | -inf | 0.044 | HIF3A        | -inf | 0.024 |
| FAM71E2       | -inf | 0.030 | HIST1H2BI    | -inf | 0.050 |
| FAM83E        | -inf | 0.021 | HIST1H2BJ    | -inf | 0.035 |
| FAM87A        | -inf | 0.031 | HIST1H3G     | -inf | 0.049 |
| FAM90A25P     | -inf | 0.048 | HIST1H3J     | -inf | 0.041 |
| FAM99B        | -inf | 0.024 | HIST1H4K     | -inf | 0.032 |
| FASLG         | -inf | 0.035 | HMP19        | -inf | 0.021 |

|               |      |       |              |      |       |
|---------------|------|-------|--------------|------|-------|
| HMX2          | -inf | 0.045 | LINC00426    | -inf | 0.017 |
| HORMAD1       | -inf | 0.016 | LINC00471    | -inf | 0.046 |
| HOXA10-HOXA9  | -inf | 0.040 | LINC00485    | -inf | 0.032 |
| HOXA11        | -inf | 0.012 | LINC00540    | -inf | 0.027 |
| HOXA9         | -inf | 0.035 | LINC00612    | -inf | 0.040 |
| HOXA-AS3      | -inf | 0.048 | LINC00618    | -inf | 0.019 |
| HOXC13        | -inf | 0.039 | LINC00635    | -inf | 0.039 |
| HOXC13-AS     | -inf | 0.038 | LINC00637    | -inf | 0.032 |
| HPCA          | -inf | 0.043 | LINC00703    | -inf | 0.032 |
| HRASLS2       | -inf | 0.041 | LINC00884    | -inf | 0.029 |
| HS6ST2        | -inf | 0.041 | LINC00886    | -inf | 0.022 |
| HSPA6         | -inf | 0.026 | LINC00887    | -inf | 0.039 |
| HTR2A         | -inf | 0.047 | LINC00933    | -inf | 0.019 |
| HTR7          | -inf | 0.040 | LINC00934    | -inf | 0.027 |
| IFT43         | -inf | 0.040 | LINC00937    | -inf | 0.027 |
| IGFBP5        | -inf | 0.038 | LINC00948    | -inf | 0.046 |
| IGFL4         | -inf | 0.037 | LINC00950    | -inf | 0.040 |
| IL17B         | -inf | 0.041 | LINC00989    | -inf | 0.025 |
| IL33          | -inf | 0.037 | LINC01018    | -inf | 0.048 |
| IL36A         | -inf | 0.029 | LINC01096    | -inf | 0.045 |
| IL5RA         | -inf | 0.008 | LINC01107    | -inf | 0.043 |
| INHBA         | -inf | 0.031 | LINC01152    | -inf | 0.044 |
| IRGM          | -inf | 0.040 | LINC01226    | -inf | 0.018 |
| IRS2          | -inf | 0.024 | LINC01305    | -inf | 0.048 |
| IRX4          | -inf | 0.041 | LINC01352    | -inf | 0.031 |
| ISLR2         | -inf | 0.022 | LMO2         | -inf | 0.032 |
| ITGB7         | -inf | 0.042 | LOC100128573 | -inf | 0.038 |
| ITGBL1        | -inf | 0.025 | LOC100128593 | -inf | 0.012 |
| JAKMIP2-AS1   | -inf | 0.049 | LOC100129138 | -inf | 0.038 |
| KCNA6         | -inf | 0.037 | LOC100130238 | -inf | 0.018 |
| KCNJ12,KCNJ18 | -inf | 0.031 | LOC100130331 | -inf | 0.014 |
| KCNJ18        | -inf | 0.036 | LOC100130673 | -inf | 0.041 |
| KCNK10        | -inf | 0.047 | LOC100130899 | -inf | 0.022 |
| KCNK2         | -inf | 0.019 | LOC100130992 | -inf | 0.048 |
| KCNK5         | -inf | 0.039 | LOC100134391 | -inf | 0.038 |
| KCNK9         | -inf | 0.037 | LOC100240734 | -inf | 0.020 |
| KCNN1         | -inf | 0.023 | LOC100240735 | -inf | 0.044 |
| KCNQ2         | -inf | 0.049 | LOC100287944 | -inf | 0.046 |
| KIAA0087      | -inf | 0.031 | LOC100288748 | -inf | 0.009 |
| KIAA1045      | -inf | 0.034 | LOC100499489 | -inf | 0.009 |
| KIAA1644      | -inf | 0.026 | LOC100505776 | -inf | 0.037 |
| KIF4B         | -inf | 0.020 | LOC100505811 | -inf | 0.032 |
| KIRREL        | -inf | 0.040 | LOC100506082 | -inf | 0.021 |
| KLF8          | -inf | 0.038 | LOC100506085 | -inf | 0.032 |
| KLHDC8A       | -inf | 0.047 | LOC100506688 | -inf | 0.039 |
| KLHL10        | -inf | 0.015 | LOC100507250 | -inf | 0.011 |
| KLRC1         | -inf | 0.013 | LOC100996291 | -inf | 0.019 |
| KLRC4         | -inf | 0.050 | LOC100996455 | -inf | 0.021 |
| KLRF1         | -inf | 0.039 | LOC101060091 | -inf | 0.021 |
| KRT42P        | -inf | 0.040 | LOC101060542 | -inf | 0.006 |
| KRTAP5-10     | -inf | 0.044 | LOC101926964 | -inf | 0.013 |
| KRTAP5-6      | -inf | 0.031 | LOC101927087 | -inf | 0.038 |
| KRTDAP        | -inf | 0.031 | LOC101927282 | -inf | 0.019 |
| LCN1          | -inf | 0.048 | LOC101927587 | -inf | 0.046 |
| LCP2          | -inf | 0.021 | LOC101927620 | -inf | 0.040 |
| LDB2          | -inf | 0.047 | LOC101927623 | -inf | 0.022 |
| LDB3          | -inf | 0.039 | LOC101927630 | -inf | 0.030 |
| LDHC          | -inf | 0.049 | LOC101927870 | -inf | 0.048 |
| LGI4          | -inf | 0.005 | LOC101927924 | -inf | 0.019 |
| LHB           | -inf | 0.041 | LOC101928043 | -inf | 0.020 |
| LHFP          | -inf | 0.050 | LOC101928154 | -inf | 0.031 |
| LHFPL1        | -inf | 0.038 | LOC101928363 | -inf | 0.043 |
| LHFPL3-AS2    | -inf | 0.037 | LOC101928460 | -inf | 0.011 |
| LHX1          | -inf | 0.026 | LOC101928530 | -inf | 0.018 |
| LILRA2        | -inf | 0.048 | LOC101928535 | -inf | 0.044 |
| LINC00161     | -inf | 0.042 | LOC101928604 | -inf | 0.049 |
| LINC00238     | -inf | 0.049 | LOC101928700 | -inf | 0.019 |
| LINC00264     | -inf | 0.039 | LOC101928796 | -inf | 0.012 |
| LINC00299     | -inf | 0.039 | LOC101928847 | -inf | 0.034 |
| LINC00316     | -inf | 0.009 | LOC101928909 | -inf | 0.012 |
| LINC00327     | -inf | 0.012 | LOC101929076 | -inf | 0.047 |
| LINC00337     | -inf | 0.021 | LOC101929344 | -inf | 0.028 |

|              |      |       |           |      |       |
|--------------|------|-------|-----------|------|-------|
| LOC101929380 | -inf | 0.017 | MRO       | -inf | 0.011 |
| LOC101929439 | -inf | 0.017 | MROH2A    | -inf | 0.045 |
| LOC101929505 | -inf | 0.018 | MS4A7     | -inf | 0.029 |
| LOC102467146 | -inf | 0.041 | MSMB      | -inf | 0.048 |
| LOC102546226 | -inf | 0.024 | MSR1      | -inf | 0.030 |
| LOC102723373 | -inf | 0.025 | MT1H      | -inf | 0.021 |
| LOC102723513 | -inf | 0.047 | MTMR8     | -inf | 0.013 |
| LOC102723544 | -inf | 0.040 | MUC5B     | -inf | 0.012 |
| LOC102724467 | -inf | 0.013 | MYBPC2    | -inf | 0.018 |
| LOC102724596 | -inf | 0.033 | MYCN      | -inf | 0.043 |
| LOC151174    | -inf | 0.044 | MYL4      | -inf | 0.026 |
| LOC283177    | -inf | 0.032 | MYL7      | -inf | 0.013 |
| LOC283299    | -inf | 0.045 | MYO16     | -inf | 0.024 |
| LOC283332    | -inf | 0.040 | MYOM2     | -inf | 0.039 |
| LOC283575    | -inf | 0.024 | NALCN     | -inf | 0.031 |
| LOC284578    | -inf | 0.009 | NANOS3    | -inf | 0.034 |
| LOC286059    | -inf | 0.044 | NAPSB     | -inf | 0.018 |
| LOC339975    | -inf | 0.041 | NBPF13P   | -inf | 0.025 |
| LOC340515    | -inf | 0.042 | NCAN      | -inf | 0.044 |
| LOC388436    | -inf | 0.025 | NDN       | -inf | 0.030 |
| LOC388849    | -inf | 0.039 | NGB       | -inf | 0.006 |
| LOC389247    | -inf | 0.045 | NHLH2     | -inf | 0.045 |
| LOC400043    | -inf | 0.043 | NIM1K     | -inf | 0.017 |
| LOC400558    | -inf | 0.026 | NKAIN2    | -inf | 0.032 |
| LOC400685    | -inf | 0.018 | NKX6-1    | -inf | 0.029 |
| LOC400863    | -inf | 0.024 | NLRP11    | -inf | 0.049 |
| LOC440311    | -inf | 0.041 | NLRP6     | -inf | 0.033 |
| LOC643201    | -inf | 0.040 | NLRP8     | -inf | 0.022 |
| LOC643387    | -inf | 0.041 | NPAS3     | -inf | 0.023 |
| LOC644919    | -inf | 0.023 | NPFFR2    | -inf | 0.015 |
| LOC644936    | -inf | 0.043 | NPPC      | -inf | 0.017 |
| LOC728228    | -inf | 0.033 | NRXN3     | -inf | 0.028 |
| LOC728989    | -inf | 0.043 | NSUN7     | -inf | 0.039 |
| LOC729609    | -inf | 0.048 | NUDT16P1  | -inf | 0.024 |
| LOC91450     | -inf | 0.023 | NUTM1     | -inf | 0.048 |
| LPO          | -inf | 0.021 | NYX       | -inf | 0.013 |
| LRRC3-AS1    | -inf | 0.043 | OBP2A     | -inf | 0.047 |
| LRRC43       | -inf | 0.041 | ODF3      | -inf | 0.032 |
| LRRN3        | -inf | 0.031 | ODF3L2    | -inf | 0.047 |
| LRRN4CL      | -inf | 0.009 | OLFML2B   | -inf | 0.019 |
| LTK          | -inf | 0.047 | ONECUT3   | -inf | 0.022 |
| LY75         | -inf | 0.043 | OR10V2P   | -inf | 0.046 |
| LY75-CD302   | -inf | 0.029 | OR1F2P    | -inf | 0.022 |
| LYPLAL1-AS1  | -inf | 0.014 | OR56B4    | -inf | 0.035 |
| LYZL2        | -inf | 0.050 | OSBPL5    | -inf | 0.010 |
| MAGEB2       | -inf | 0.024 | OSMR-AS1  | -inf | 0.011 |
| MAP1LC3B2    | -inf | 0.016 | OTOA      | -inf | 0.042 |
| MAPK15       | -inf | 0.044 | OTOGL     | -inf | 0.019 |
| MATK         | -inf | 0.033 | OVOL1-AS1 | -inf | 0.049 |
| MATN1        | -inf | 0.028 | OVOL3     | -inf | 0.021 |
| MB21D1       | -inf | 0.012 | P2RX3     | -inf | 0.012 |
| MEG3         | -inf | 0.023 | P2RX7     | -inf | 0.009 |
| MEIS3P1      | -inf | 0.049 | P4HA3     | -inf | 0.012 |
| MESP1        | -inf | 0.046 | PADI4     | -inf | 0.043 |
| MESP2        | -inf | 0.049 | PARM1     | -inf | 0.031 |
| MFAP5        | -inf | 0.047 | PARP6     | -inf | 0.036 |
| MFRP         | -inf | 0.038 | PATE2     | -inf | 0.044 |
| MGC39584     | -inf | 0.049 | PAX3      | -inf | 0.015 |
| MINOS1P1     | -inf | 0.016 | PAX5      | -inf | 0.020 |
| MIR1248      | -inf | 0.049 | PBX1      | -inf | 0.025 |
| MIR1282      | -inf | 0.036 | PCAT1     | -inf | 0.019 |
| MIR4687      | -inf | 0.041 | PCCA-AS1  | -inf | 0.019 |
| MIR5187      | -inf | 0.012 | PCDH9     | -inf | 0.012 |
| MIR6126      | -inf | 0.036 | PCDHB17   | -inf | 0.035 |
| MIR6753      | -inf | 0.019 | PCDHGA2   | -inf | 0.019 |
| MLPH         | -inf | 0.014 | PCDHGB7   | -inf | 0.034 |
| MMP10        | -inf | 0.010 | PCDHGC4   | -inf | 0.026 |
| MMP20        | -inf | 0.046 | PDE7B     | -inf | 0.023 |
| MMP23B       | -inf | 0.040 | PDZD4     | -inf | 0.021 |
| MMP9         | -inf | 0.008 | PDZK1P1   | -inf | 0.009 |
| MMRN2        | -inf | 0.008 | PGM5      | -inf | 0.048 |
| MPPED1       | -inf | 0.006 | PHOX2A    | -inf | 0.015 |

|             |      |       |                 |      |       |
|-------------|------|-------|-----------------|------|-------|
| PILRA       | -inf | 0.049 | RXRG            | -inf | 0.047 |
| PINLYP      | -inf | 0.031 | RYR2            | -inf | 0.012 |
| PLA1A       | -inf | 0.008 | S1PR1           | -inf | 0.039 |
| PLA2G4E     | -inf | 0.007 | SATB1           | -inf | 0.031 |
| PLCB2       | -inf | 0.031 | SCARNA14        | -inf | 0.012 |
| PLCXD3      | -inf | 0.031 | SCARNA16        | -inf | 0.043 |
| PLXDC1      | -inf | 0.040 | SCARNA4         | -inf | 0.049 |
| PMP2        | -inf | 0.009 | SCG2            | -inf | 0.033 |
| POM121L2    | -inf | 0.012 | SCG3            | -inf | 0.026 |
| POU5F1B     | -inf | 0.049 | SCML4           | -inf | 0.014 |
| POU5F1P3    | -inf | 0.041 | SCTR            | -inf | 0.015 |
| PPAPDC1A    | -inf | 0.046 | SEC14L4         | -inf | 0.023 |
| PPEF2       | -inf | 0.032 | SELL            | -inf | 0.042 |
| PPP1R16B    | -inf | 0.040 | SELV            | -inf | 0.049 |
| PPP1R2P3    | -inf | 0.045 | SEMA5B          | -inf | 0.028 |
| PPP1R3A     | -inf | 0.025 | SERPINA13P      | -inf | 0.011 |
| PREX1       | -inf | 0.041 | SERPINA9        | -inf | 0.018 |
| PRR23C      | -inf | 0.045 | SHROOM3         | -inf | 0.021 |
| PRR35       | -inf | 0.026 | SIGLEC1         | -inf | 0.023 |
| PRSS35      | -inf | 0.039 | SIGLEC14        | -inf | 0.026 |
| PRSS56      | -inf | 0.034 | SIX3            | -inf | 0.044 |
| PSG11       | -inf | 0.028 | SLC10A1         | -inf | 0.043 |
| PTCHD1      | -inf | 0.013 | SLC16A12        | -inf | 0.044 |
| PTCHD2      | -inf | 0.029 | SLC28A2         | -inf | 0.031 |
| PTGDS       | -inf | 0.021 | SLC2A5          | -inf | 0.011 |
| PTGER1      | -inf | 0.043 | SLC45A2         | -inf | 0.041 |
| PTGER4      | -inf | 0.019 | SLC45A4         | -inf | 0.025 |
| PTPLAD2     | -inf | 0.011 | SLC4A1          | -inf | 0.026 |
| PTPN7       | -inf | 0.046 | SLC4A4          | -inf | 0.014 |
| PTPRC       | -inf | 0.043 | SLC52A3         | -inf | 0.038 |
| PTPRD       | -inf | 0.047 | SLC6A20         | -inf | 0.014 |
| PYHIN1      | -inf | 0.040 | SLC7A14         | -inf | 0.038 |
| PYY2        | -inf | 0.030 | SLC8A3          | -inf | 0.023 |
| QRFP        | -inf | 0.027 | SLCO1B1         | -inf | 0.018 |
| RAB27B      | -inf | 0.025 | SLCO3A1         | -inf | 0.004 |
| RAB33A      | -inf | 0.048 | SLCO6A1         | -inf | 0.045 |
| RAB34       | -inf | 0.026 | SLPI            | -inf | 0.022 |
| RAB38       | -inf | 0.025 | SLX1A-SULT1A3   | -inf | 0.025 |
| RAB41       | -inf | 0.024 | SMCO2           | -inf | 0.033 |
| RAB44       | -inf | 0.012 | SMIM22          | -inf | 0.037 |
| RAD21L1     | -inf | 0.042 | SMKR1           | -inf | 0.036 |
| RAET1E      | -inf | 0.011 | SMTNL1          | -inf | 0.028 |
| RAET1G      | -inf | 0.038 | SNHG15          | -inf | 0.041 |
| RASGRF2-AS1 | -inf | 0.032 | SNHG22          | -inf | 0.046 |
| RASSF10     | -inf | 0.038 | SNORA14B        | -inf | 0.032 |
| RCAN2       | -inf | 0.030 | SNORA16A        | -inf | 0.045 |
| REC114      | -inf | 0.036 | SNORA18         | -inf | 0.043 |
| REG3A       | -inf | 0.040 | SNORA21         | -inf | 0.016 |
| REN         | -inf | 0.041 | SNORA2B         | -inf | 0.042 |
| RET         | -inf | 0.038 | SNORA30         | -inf | 0.017 |
| RFPL2       | -inf | 0.042 | SNORA45A        | -inf | 0.022 |
| RGPD5,RGPD8 | -inf | 0.016 | SNORA56         | -inf | 0.018 |
| RGPD6       | -inf | 0.029 | SNORA5A         | -inf | 0.030 |
| RGS17       | -inf | 0.028 | SNORA64         | -inf | 0.035 |
| RHBDL3      | -inf | 0.011 | SNORA66         | -inf | 0.012 |
| RHOJ        | -inf | 0.044 | SNORA67         | -inf | 0.022 |
| RIPPLY1     | -inf | 0.022 | SNORA81         | -inf | 0.021 |
| RLN1        | -inf | 0.049 | SNORD10         | -inf | 0.050 |
| RLN2        | -inf | 0.043 | SNORD100        | -inf | 0.037 |
| RNASE3      | -inf | 0.038 | SNORD12         | -inf | 0.043 |
| RNF112      | -inf | 0.024 | SNORD12C        | -inf | 0.046 |
| RNU11       | -inf | 0.024 | SNORD26         | -inf | 0.016 |
| ROPN1B      | -inf | 0.044 | SNORD33         | -inf | 0.044 |
| RPH3A       | -inf | 0.045 | SNORD83A        | -inf | 0.030 |
| RPL13AP20   | -inf | 0.018 | SOCS2-AS1       | -inf | 0.049 |
| RPL13AP3    | -inf | 0.039 | SPAG17          | -inf | 0.036 |
| RPL23P8     | -inf | 0.037 | SPI1            | -inf | 0.038 |
| RPL29P2     | -inf | 0.040 | SPSB4           | -inf | 0.034 |
| RPS26P11    | -inf | 0.024 | SRGAP2B,SRGAP2C | -inf | 0.037 |
| RPS6KA6     | -inf | 0.019 | SRGN            | -inf | 0.026 |
| RPSAP52     | -inf | 0.038 | SRL             | -inf | 0.026 |
| RRN3P2      | -inf | 0.039 | ST18            | -inf | 0.021 |

|           |      |       |           |      |       |
|-----------|------|-------|-----------|------|-------|
| STAP1     | -inf | 0.011 | TPSB2     | -inf | 0.029 |
| STEAP4    | -inf | 0.014 | TPTE2     | -inf | 0.045 |
| SULF1     | -inf | 0.015 | TPTE2P1   | -inf | 0.013 |
| SULT1A3   | -inf | 0.015 | TPTE2P6   | -inf | 0.039 |
| SULT1A4   | -inf | 0.015 | TRABD2A   | -inf | 0.015 |
| SULT1C2P1 | -inf | 0.047 | TRABD2B   | -inf | 0.021 |
| SUMO4     | -inf | 0.019 | TRERF1    | -inf | 0.036 |
| SUN3      | -inf | 0.014 | TSGA10IP  | -inf | 0.023 |
| SUPT20HL2 | -inf | 0.020 | TSPAN32   | -inf | 0.040 |
| SUSD4     | -inf | 0.028 | TSPY26P   | -inf | 0.036 |
| SVEP1     | -inf | 0.023 | TXLNB     | -inf | 0.025 |
| SYCE3     | -inf | 0.021 | UBE2E4P   | -inf | 0.031 |
| SYK       | -inf | 0.011 | UBE2NL    | -inf | 0.048 |
| SYNGR4    | -inf | 0.036 | UCHL1     | -inf | 0.011 |
| SYNPO2L   | -inf | 0.013 | UGT3A2    | -inf | 0.034 |
| SYT1      | -inf | 0.026 | UNC79     | -inf | 0.027 |
| SYT17     | -inf | 0.047 | USH2A     | -inf | 0.038 |
| TAL1      | -inf | 0.032 | USP30-AS1 | -inf | 0.007 |
| TBPL2     | -inf | 0.039 | USP51     | -inf | 0.016 |
| TCERG1L   | -inf | 0.042 | UTY       | -inf | 0.046 |
| TCF23     | -inf | 0.016 | VEPH1     | -inf | 0.020 |
| TCF4      | -inf | 0.031 | VIM-AS1   | -inf | 0.032 |
| TCTE1     | -inf | 0.023 | WDR46     | -inf | 0.044 |
| TENM2     | -inf | 0.034 | WFDC3     | -inf | 0.014 |
| TEX14     | -inf | 0.030 | WISP2     | -inf | 0.030 |
| TEX30     | -inf | 0.018 | WISP3     | -inf | 0.039 |
| TINAG     | -inf | 0.049 | WNT5B     | -inf | 0.012 |
| TLR8-AS1  | -inf | 0.032 | WNT9A     | -inf | 0.033 |
| TM4SF18   | -inf | 0.029 | WT1-AS    | -inf | 0.039 |
| TMCC3     | -inf | 0.035 | XKR3      | -inf | 0.025 |
| TMEM130   | -inf | 0.045 | ZBBX      | -inf | 0.020 |
| TMEM191C  | -inf | 0.012 | ZBP1      | -inf | 0.032 |
| TMEM232   | -inf | 0.022 | ZDHHC19   | -inf | 0.011 |
| TMEM52B   | -inf | 0.046 | ZNF208    | -inf | 0.048 |
| TMEM89    | -inf | 0.013 | ZNF521    | -inf | 0.048 |
| TMIGD1    | -inf | 0.049 | ZNF595    | -inf | 0.024 |
| TMPRSS11D | -inf | 0.034 | ZNF676    | -inf | 0.015 |
| TMPRSS4   | -inf | 0.042 | ZNF677    | -inf | 0.022 |
| TNC       | -inf | 0.049 | ZNF683    | -inf | 0.041 |
| TNFAIP8L2 | -inf | 0.050 | ZNF717    | -inf | 0.043 |
| TNFRSF1B  | -inf | 0.049 | ZNF729    | -inf | 0.020 |
| TNKS2-AS1 | -inf | 0.022 |           |      |       |

**Table S5** mRNA modulated in HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs (RNAseq data)

| Gene             | Fold change | p-value | Gene      | Fold change | p-value |
|------------------|-------------|---------|-----------|-------------|---------|
| TRIM6-TRIM34     | -827.89     | 0.041   | TMEM158   | -5.91       | 0.022   |
| TNFRSF6B         | -486.21     | 0.020   | NRG1      | -5.90       | 0.011   |
| APOBEC3A_B       | -233.97     | 0.006   | SNPH      | -5.87       | 0.006   |
| PCDHAC1          | -198.42     | 0.049   | MYEOV     | -5.83       | 0.012   |
| PCDHA2           | -183.69     | 0.025   | LINC00659 | -5.82       | 0.007   |
| PCDHA13          | -169.55     | 0.017   | FOSB      | -5.78       | 0.015   |
| PCDHA12          | -166.98     | 0.007   | NKAIN1    | -5.75       | 0.003   |
| HSPE1-MOB4       | -159.83     | 0.004   | LBH       | -5.71       | 0.048   |
| ZNF559-ZNF177    | -147.73     | 0.004   | KRT37     | -5.69       | 0.047   |
| PCDHA1           | -136.85     | 0.015   | TIE1      | -5.68       | 0.028   |
| FKBP1A-SDCBP2    | -92.12      | 0.026   | MEIOB     | -5.64       | 0.030   |
| HSPB2-C11orf52   | -76.07      | 0.023   | MYCT1     | -5.61       | 0.023   |
| URGCP-MRPS24     | -68.41      | 0.034   | CPNE7     | -5.59       | 0.023   |
| UGT1A7           | -59.05      | 0.043   | TBC1D3C   | -5.57       | 0.034   |
| TXNRD3NB         | -55.03      | 0.040   | KISS1     | -5.56       | 0.048   |
| SEPT5-GP1BB      | -50.55      | 0.048   | CARD11    | -5.55       | 0.015   |
| TM4SF19-TCTEX1D2 | -49.86      | 0.009   | HTRA3     | -5.53       | 0.005   |
| CKLF-CMTM1       | -49.26      | 0.001   | MECOM     | -5.53       | 0.008   |
| PRR5-ARHGAP8     | -48.32      | 0.015   | ETS1      | -5.51       | 0.012   |
| UGT1A4           | -47.59      | 0.010   | FSBP      | -5.50       | 0.016   |
| UGT1A5           | -45.50      | 0.023   | LINC01204 | -5.50       | 0.024   |
| CRHR1            | -42.03      | 0.036   | SERPINB2  | -5.47       | 0.010   |
| UGT1A8           | -40.23      | 0.023   | NAV3      | -5.46       | 0.035   |
| UGT1A9           | -36.61      | 0.013   | SPHAR     | -5.43       | 0.028   |
| UGT1A10          | -36.47      | 0.036   | CACNB3    | -5.43       | 0.021   |
| NT5C1B           | -34.64      | 0.003   | FLG-AS1   | -5.41       | 0.007   |
| TNNI3K           | -30.79      | 0.019   | RND3      | -5.37       | 0.012   |
| TBC1D3           | -20.13      | 0.031   | B3GNT7    | -5.35       | 0.036   |
| STAG3L1          | -19.61      | 0.027   | SP140     | -5.35       | 0.016   |
| CYP3A7-CYP3AP1   | -15.98      | 0.008   | ATP8A2    | -5.31       | 0.039   |
| SCARNA13         | -14.89      | 0.023   | PAX8-AS1  | -5.30       | 0.016   |
| SYNJ2BP-COX16    | -14.23      | 0.044   | LOC153910 | -5.28       | 0.013   |
| SLMO2-ATP5E      | -12.57      | 0.023   | KRT81     | -5.28       | 0.029   |
| MINOS1-NBL1      | -12.49      | 0.039   | SEMA3C    | -5.28       | 0.040   |
| LOC101929829     | -10.28      | 0.019   | SLC16A2   | -5.26       | 0.025   |
| MT1B             | -10.13      | 0.041   | TSPAN5    | -5.24       | 0.015   |
| CALB2            | -8.01       | 0.005   | RASSF2    | -5.23       | 0.020   |
| COL6A2           | -7.60       | 0.013   | DYSF      | -5.23       | 0.040   |
| ARC              | -7.50       | 0.045   | MLLT11    | -5.23       | 0.006   |
| MT1M             | -7.30       | 0.020   | MYBPH     | -5.20       | 0.033   |
| PRSS23           | -7.25       | 0.047   | WDR66     | -5.20       | 0.023   |
| SBK2             | -7.21       | 0.049   | MSN       | -5.20       | 0.014   |
| GADD45G          | -6.89       | 0.031   | CATSPERG  | -5.19       | 0.009   |
| NCKAP5           | -6.78       | 0.021   | MYZAP     | -5.19       | 0.040   |
| KRTAP2-3         | -6.77       | 0.015   | PRDM7     | -5.17       | 0.012   |
| COLEC12          | -6.71       | 0.040   | TMSB4X    | -5.17       | 0.022   |
| CRYAB            | -6.57       | 0.029   | PCNXL2    | -5.16       | 0.015   |
| VIPR1            | -6.53       | 0.015   | SLC30A2   | -5.16       | 0.012   |
| SOX8             | -6.47       | 0.004   | TMEM40    | -5.15       | 0.040   |
| ADAMTS9          | -6.44       | 0.045   | MAP2      | -5.15       | 0.025   |
| FLG              | -6.43       | 0.029   | GFPT2     | -5.15       | 0.033   |
| RRAD             | -6.39       | 0.034   | AHNAK2    | -5.14       | 0.003   |
| PMEPA1           | -6.31       | 0.039   | HRNR      | -5.12       | 0.012   |
| LAMB3            | -6.31       | 0.035   | DYNC111   | -5.12       | 0.041   |
| KRT7             | -6.28       | 0.034   | CSF2      | -5.12       | 0.039   |
| WNT6             | -6.16       | 0.031   | MYH16     | -5.10       | 0.022   |
| FLNC             | -6.13       | 0.042   | BIK       | -5.10       | 0.047   |
| CXCR4            | -6.13       | 0.010   | KLHL4     | -5.10       | 0.016   |
| SIDT1            | -6.11       | 0.029   | FXYD5     | -5.10       | 0.028   |
| RASGRP3          | -6.10       | 0.023   | CCR7      | -5.10       | 0.041   |
| KIF1A            | -6.05       | 0.023   | KRT17     | -5.09       | 0.016   |
| ROBO4            | -6.03       | 0.035   | IL11      | -5.08       | 0.033   |
| CD44             | -6.00       | 0.012   | KRT20     | -5.08       | 0.028   |
| SYT13            | -5.99       | 0.023   | ITGA5     | -5.06       | 0.048   |
| CPA4             | -5.96       | 0.029   | STC1      | -5.04       | 0.005   |
| FAM46C           | -5.95       | 0.028   | TLR4      | -5.04       | 0.043   |
| MMP16            | -5.93       | 0.020   | GAD1      | -5.03       | 0.003   |
| SPOCK1           | -5.93       | 0.040   | FZD2      | -5.00       | 0.026   |
| DOK7             | -5.91       | 0.032   | C19orf33  | -5.00       | 0.023   |

|                   |       |       |              |       |       |
|-------------------|-------|-------|--------------|-------|-------|
| KIF26B            | -4.98 | 0.049 | PRF1         | -4.49 | 0.011 |
| CSDC2             | -4.96 | 0.018 | TNFRSF9      | -4.49 | 0.007 |
| TMEM92            | -4.94 | 0.011 | DDX60L       | -4.48 | 0.034 |
| EPHX4             | -4.94 | 0.008 | LEPREL1      | -4.48 | 0.041 |
| VGf               | -4.94 | 0.031 | MAP1A        | -4.47 | 0.017 |
| ZNF816-ZNF321P    | -4.93 | 0.013 | CYP4F35P     | -4.47 | 0.015 |
| TH                | -4.93 | 0.037 | GOLGA8M      | -4.46 | 0.035 |
| FOXL2NB           | -4.89 | 0.004 | S100A2       | -4.46 | 0.015 |
| RTN1              | -4.89 | 0.033 | CHI3L2       | -4.45 | 0.037 |
| NGFR              | -4.89 | 0.038 | LOC100287225 | -4.45 | 0.004 |
| C8orf44-SGK3,SGK3 | -4.86 | 0.039 | TGFB111      | -4.45 | 0.018 |
| MYOF              | -4.86 | 0.025 | COL6A3       | -4.45 | 0.018 |
| LOXL2             | -4.84 | 0.011 | SYTL5        | -4.45 | 0.015 |
| KRT80             | -4.83 | 0.015 | HIST1H4H     | -4.44 | 0.032 |
| WDR65             | -4.83 | 0.014 | C16orf45     | -4.44 | 0.037 |
| IGF1              | -4.82 | 0.043 | SHROOM4      | -4.43 | 0.014 |
| LINC00704         | -4.81 | 0.017 | KRT12        | -4.43 | 0.041 |
| GPR115            | -4.80 | 0.046 | HAVCR2       | -4.42 | 0.023 |
| LOC101928075      | -4.80 | 0.017 | KCNH2        | -4.42 | 0.027 |
| MEIS3             | -4.78 | 0.032 | EPHB2        | -4.42 | 0.003 |
| CLDN10-AS1        | -4.78 | 0.034 | LTBP1        | -4.42 | 0.019 |
| SYT5              | -4.78 | 0.043 | DLX3         | -4.41 | 0.022 |
| GLIPR1            | -4.77 | 0.010 | DNAAF1       | -4.41 | 0.037 |
| CCNO              | -4.77 | 0.044 | AMPD3        | -4.41 | 0.019 |
| COL12A1           | -4.76 | 0.019 | SIPA1L2      | -4.40 | 0.024 |
| LOC101928489      | -4.76 | 0.007 | DUOXA1       | -4.40 | 0.048 |
| SPEG              | -4.76 | 0.006 | RAB3B        | -4.39 | 0.020 |
| GPR55             | -4.75 | 0.027 | VNN1         | -4.39 | 0.033 |
| HSPB8             | -4.75 | 0.034 | ASB2         | -4.39 | 0.041 |
| FA2H              | -4.74 | 0.014 | MS4A15       | -4.38 | 0.018 |
| LCK               | -4.74 | 0.016 | GPRC5A       | -4.37 | 0.040 |
| PRSS22            | -4.73 | 0.023 | WNT10B       | -4.37 | 0.031 |
| GADD45B           | -4.72 | 0.013 | KCNF1        | -4.37 | 0.033 |
| KCNK6             | -4.72 | 0.034 | GEM          | -4.37 | 0.048 |
| KIAA1549L         | -4.71 | 0.037 | SH3TC2       | -4.37 | 0.034 |
| SLCO5A1           | -4.71 | 0.017 | PDLIM4       | -4.36 | 0.004 |
| TUBB2B            | -4.70 | 0.039 | GRIP1        | -4.35 | 0.011 |
| IGFN1             | -4.70 | 0.010 | SEMA5A       | -4.35 | 0.023 |
| MYO18B            | -4.69 | 0.025 | GGN          | -4.35 | 0.026 |
| MICALCL           | -4.68 | 0.023 | HDX          | -4.35 | 0.035 |
| TMEM156           | -4.68 | 0.025 | CATSPER1     | -4.34 | 0.038 |
| NTNG1             | -4.68 | 0.033 | LINC00858    | -4.34 | 0.014 |
| SETD7             | -4.68 | 0.045 | CLIP4        | -4.34 | 0.036 |
| KLK6              | -4.68 | 0.021 | S100A6       | -4.33 | 0.017 |
| SBK3              | -4.67 | 0.037 | KRT13        | -4.32 | 0.006 |
| RASA3             | -4.67 | 0.029 | FHAD1        | -4.32 | 0.003 |
| DUSP4             | -4.66 | 0.037 | CTSE         | -4.32 | 0.030 |
| HDAC9             | -4.65 | 0.039 | GPSM1        | -4.31 | 0.042 |
| LFNG              | -4.65 | 0.003 | ARAP3        | -4.31 | 0.022 |
| S1PR4             | -4.63 | 0.050 | KIF17        | -4.30 | 0.017 |
| LCE1F             | -4.63 | 0.007 | CDKN2B-AS1   | -4.29 | 0.034 |
| ERC2              | -4.62 | 0.045 | EDN1         | -4.28 | 0.028 |
| ITGA3             | -4.61 | 0.030 | CD79A        | -4.28 | 0.027 |
| GSDMA             | -4.60 | 0.036 | IL18         | -4.27 | 0.019 |
| TMCC2             | -4.59 | 0.017 | IGFBP2       | -4.27 | 0.014 |
| SYT11             | -4.59 | 0.040 | ECSCR        | -4.26 | 0.048 |
| CSMD3             | -4.59 | 0.033 | STXBP5-AS1   | -4.26 | 0.042 |
| RASEF             | -4.57 | 0.008 | EGR4         | -4.26 | 0.034 |
| SCN4A             | -4.57 | 0.038 | HECW2        | -4.26 | 0.024 |
| DNMT3L            | -4.57 | 0.011 | ADAMTS14     | -4.25 | 0.016 |
| CST1              | -4.56 | 0.027 | PELI2        | -4.25 | 0.039 |
| ALOXE3            | -4.55 | 0.010 | KCNN4        | -4.25 | 0.040 |
| NTSR1             | -4.55 | 0.043 | SULT2B1      | -4.24 | 0.049 |
| CDCP1             | -4.55 | 0.042 | EEF1A2       | -4.24 | 0.047 |
| EFNB3             | -4.54 | 0.025 | HK1          | -4.24 | 0.011 |
| TMIGD2            | -4.54 | 0.004 | DRP2         | -4.24 | 0.022 |
| LOC100133920      | -4.53 | 0.048 | ARHGEF4      | -4.23 | 0.046 |
| HES2              | -4.51 | 0.033 | LOC100507156 | -4.23 | 0.038 |
| CDA               | -4.51 | 0.019 | LOC100653515 | -4.23 | 0.019 |
| MUC4              | -4.51 | 0.047 | RIN2         | -4.22 | 0.030 |
| MUM1L1            | -4.51 | 0.027 | PEAR1        | -4.21 | 0.045 |
| MRGPRX4           | -4.49 | 0.050 | FAM65C       | -4.21 | 0.022 |



|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| QPCT         | -4.21 | 0.043 | SPINT2       | -3.90 | 0.022 |
| MMP1         | -4.20 | 0.048 | DEFB1        | -3.89 | 0.039 |
| TFPI2        | -4.20 | 0.021 | SPRED3       | -3.89 | 0.033 |
| COL17A1      | -4.19 | 0.017 | ZEB2         | -3.89 | 0.028 |
| VGLL3        | -4.19 | 0.023 | RAC2         | -3.89 | 0.025 |
| LOC284454    | -4.18 | 0.022 | L1CAM        | -3.89 | 0.004 |
| ARHGEF10     | -4.17 | 0.038 | MAFA         | -3.88 | 0.018 |
| SYN1         | -4.17 | 0.018 | LAMB4        | -3.88 | 0.026 |
| KCNQ5        | -4.16 | 0.012 | KRT15        | -3.88 | 0.050 |
| BHLHE41      | -4.16 | 0.027 | CXCL8        | -3.87 | 0.047 |
| TLR1         | -4.15 | 0.033 | FBXL16       | -3.87 | 0.021 |
| NAV1         | -4.15 | 0.024 | KRTAP3-1     | -3.87 | 0.004 |
| P2RY4        | -4.15 | 0.049 | LOC286297    | -3.87 | 0.030 |
| NDRG4        | -4.14 | 0.040 | ESAM         | -3.86 | 0.027 |
| WLS          | -4.14 | 0.036 | WFDC2        | -3.86 | 0.020 |
| NCF2         | -4.13 | 0.010 | FOS          | -3.86 | 0.032 |
| TNFSF15      | -4.13 | 0.017 | DKK3         | -3.86 | 0.016 |
| PRR5L        | -4.12 | 0.003 | NOS3         | -3.85 | 0.031 |
| SPOCD1       | -4.12 | 0.021 | ARL4C        | -3.85 | 0.032 |
| SLC4A3       | -4.10 | 0.050 | C18orf32     | -3.85 | 0.009 |
| PAEP         | -4.09 | 0.045 | SLC8A2       | -3.84 | 0.039 |
| TMEM35       | -4.08 | 0.021 | LTBP2        | -3.83 | 0.029 |
| CD82         | -4.08 | 0.018 | ALDH3A1      | -3.82 | 0.027 |
| KLK13        | -4.07 | 0.021 | GLIS3        | -3.82 | 0.012 |
| CYP1A1       | -4.07 | 0.023 | KIF5C        | -3.82 | 0.012 |
| PDCD1        | -4.06 | 0.006 | EHD2         | -3.81 | 0.007 |
| RNF182       | -4.06 | 0.042 | EVA1C        | -3.81 | 0.022 |
| RNF183       | -4.05 | 0.018 | CPEB1        | -3.80 | 0.030 |
| KLF4         | -4.05 | 0.027 | ADAMTS4      | -3.80 | 0.050 |
| ADAM32       | -4.04 | 0.029 | ADRA1D       | -3.80 | 0.048 |
| SLC35E4      | -4.04 | 0.032 | DUSP5        | -3.79 | 0.033 |
| AQP7P1       | -4.04 | 0.041 | SDC3         | -3.78 | 0.033 |
| SLC17A7      | -4.04 | 0.031 | THBS2        | -3.77 | 0.010 |
| CAV2         | -4.04 | 0.026 | PLAUR        | -3.76 | 0.021 |
| ITGAM        | -4.02 | 0.011 | OAS2         | -3.76 | 0.043 |
| HIC1         | -4.02 | 0.026 | PTAFR        | -3.76 | 0.027 |
| LOC101927482 | -4.02 | 0.004 | LTBP4        | -3.75 | 0.031 |
| TRIM54       | -4.02 | 0.038 | PLA2G4C      | -3.74 | 0.040 |
| FLJ45513     | -4.01 | 0.014 | VCAN         | -3.74 | 0.006 |
| DNAH11       | -4.01 | 0.047 | GGT8P        | -3.74 | 0.033 |
| MFG8         | -4.01 | 0.047 | HEXA-AS1     | -3.73 | 0.011 |
| ADAM19       | -4.00 | 0.009 | LCE1E        | -3.73 | 0.015 |
| DNAH17-AS1   | -4.00 | 0.035 | EPHB1        | -3.73 | 0.036 |
| IGFBP7       | -4.00 | 0.017 | LINC00520    | -3.73 | 0.006 |
| CD109        | -3.99 | 0.025 | TAGLN3       | -3.72 | 0.020 |
| GPR132       | -3.99 | 0.003 | IGF2-AS      | -3.72 | 0.027 |
| PLAU         | -3.98 | 0.021 | ARHGAP23     | -3.72 | 0.027 |
| CRISPLD2     | -3.97 | 0.020 | LYVE1        | -3.71 | 0.006 |
| ZDHHC15      | -3.97 | 0.042 | BIRC7        | -3.71 | 0.038 |
| CILP2        | -3.97 | 0.017 | DPYSL3       | -3.71 | 0.042 |
| GULP1        | -3.97 | 0.033 | S100A3       | -3.71 | 0.049 |
| WNT11        | -3.97 | 0.024 | ZNF185       | -3.71 | 0.037 |
| LINC00319    | -3.97 | 0.006 | MACC1        | -3.70 | 0.010 |
| N4BP3        | -3.96 | 0.014 | LOC101928784 | -3.70 | 0.042 |
| EMP1         | -3.96 | 0.038 | MT1A         | -3.70 | 0.011 |
| PRKCG        | -3.95 | 0.025 | SNCG         | -3.70 | 0.010 |
| MMP25        | -3.95 | 0.040 | GPC2         | -3.70 | 0.042 |
| CDKN2B       | -3.95 | 0.035 | SBK1         | -3.70 | 0.018 |
| RAI2         | -3.95 | 0.041 | ZG16B        | -3.69 | 0.048 |
| COL1A1       | -3.94 | 0.021 | PTHLH        | -3.69 | 0.044 |
| CNN1         | -3.93 | 0.046 | GLIPR2       | -3.69 | 0.033 |
| POU3F2       | -3.93 | 0.006 | ENTPD3       | -3.69 | 0.006 |
| CBFA2T3      | -3.93 | 0.006 | TMEM151B     | -3.68 | 0.006 |
| SPINT1       | -3.93 | 0.039 | CDYL2        | -3.67 | 0.017 |
| RAMP1        | -3.93 | 0.044 | ADAMTS7      | -3.67 | 0.047 |
| LRRN4        | -3.92 | 0.009 | DGKA         | -3.67 | 0.014 |
| STARD8       | -3.92 | 0.028 | CAPN2        | -3.67 | 0.020 |
| GPR83        | -3.92 | 0.030 | ALDH1A3      | -3.67 | 0.005 |
| CORO2B       | -3.92 | 0.031 | POU2F2       | -3.66 | 0.009 |
| AK5          | -3.92 | 0.023 | TSPAN1       | -3.66 | 0.004 |
| WNT7B        | -3.91 | 0.025 | HMCN1        | -3.66 | 0.045 |
| CILP         | -3.91 | 0.012 | CYP1A2       | -3.66 | 0.036 |

|            |       |       |               |       |       |
|------------|-------|-------|---------------|-------|-------|
| TUBA1A     | -3.66 | 0.020 | USH1G         | -3.48 | 0.031 |
| NSG1       | -3.65 | 0.038 | LAMC2         | -3.47 | 0.033 |
| GPR114     | -3.65 | 0.048 | PFKP          | -3.47 | 0.046 |
| IRF6       | -3.65 | 0.011 | GLIS1         | -3.47 | 0.013 |
| MYH15      | -3.65 | 0.004 | BEND6         | -3.46 | 0.036 |
| CPT1C      | -3.65 | 0.013 | SAMD5         | -3.46 | 0.044 |
| ZSWIM4     | -3.65 | 0.048 | TFF1          | -3.46 | 0.013 |
| RBP1       | -3.64 | 0.021 | MAP3K5        | -3.46 | 0.036 |
| OTP        | -3.64 | 0.010 | A4GALT        | -3.46 | 0.003 |
| PKIB       | -3.64 | 0.036 | ANXA3         | -3.45 | 0.040 |
| SCN2B      | -3.64 | 0.033 | HCN2          | -3.45 | 0.031 |
| PSG9       | -3.63 | 0.024 | TM4SF1-AS1    | -3.45 | 0.018 |
| ZNF662     | -3.63 | 0.034 | ECM1          | -3.45 | 0.027 |
| OLFML2A    | -3.63 | 0.030 | DAAM2         | -3.44 | 0.008 |
| MID2       | -3.63 | 0.039 | LGALS1        | -3.44 | 0.005 |
| PCDHB6     | -3.63 | 0.045 | ZNF804A       | -3.44 | 0.036 |
| AUTS2      | -3.62 | 0.029 | DSE           | -3.43 | 0.034 |
| GPR173     | -3.61 | 0.033 | CYP1B1        | -3.43 | 0.044 |
| TRIM7      | -3.61 | 0.045 | THBS3         | -3.43 | 0.032 |
| ACTA1      | -3.61 | 0.011 | PCP2          | -3.43 | 0.038 |
| ATP2A3     | -3.61 | 0.028 | HTRA1         | -3.42 | 0.003 |
| IMPG2      | -3.60 | 0.003 | MMP7          | -3.42 | 0.035 |
| LPPR3      | -3.60 | 0.030 | SYT12         | -3.41 | 0.005 |
| LINC00598  | -3.60 | 0.023 | AMOTL1        | -3.41 | 0.049 |
| GPR75-ASB3 | -3.59 | 0.008 | UCA1          | -3.41 | 0.034 |
| FLJ22447   | -3.59 | 0.020 | RASD1         | -3.41 | 0.035 |
| F2RL1      | -3.59 | 0.019 | ABLIM3        | -3.40 | 0.044 |
| IGFBP6     | -3.59 | 0.036 | EGLN3         | -3.40 | 0.044 |
| THSD7A     | -3.57 | 0.013 | CD9           | -3.40 | 0.028 |
| PLB1       | -3.57 | 0.015 | CD81          | -3.40 | 0.009 |
| MISP       | -3.57 | 0.029 | SNAI1         | -3.40 | 0.020 |
| GPR87      | -3.57 | 0.041 | SOX4          | -3.40 | 0.006 |
| ANKRD44    | -3.57 | 0.029 | CCND2         | -3.40 | 0.031 |
| METRNL     | -3.56 | 0.038 | DENND2C       | -3.40 | 0.044 |
| MMP24      | -3.56 | 0.043 | CTHRC1        | -3.40 | 0.046 |
| SULT1B1    | -3.56 | 0.029 | PSG4          | -3.39 | 0.003 |
| FHL2       | -3.56 | 0.023 | ATP6V0D2      | -3.38 | 0.048 |
| CHST11     | -3.56 | 0.041 | SCN4B         | -3.38 | 0.019 |
| EMP3       | -3.56 | 0.041 | LPAR5         | -3.38 | 0.005 |
| CNIH3      | -3.56 | 0.027 | MGAT5B        | -3.38 | 0.045 |
| LIPH       | -3.55 | 0.009 | HAP1          | -3.37 | 0.029 |
| XIRP1      | -3.55 | 0.042 | VWF           | -3.37 | 0.012 |
| SHISA4     | -3.55 | 0.029 | CLDN3         | -3.37 | 0.046 |
| CTXN1      | -3.55 | 0.036 | SELPLG        | -3.36 | 0.037 |
| CRABP2     | -3.55 | 0.041 | CDH26         | -3.36 | 0.008 |
| ZDHHC22    | -3.55 | 0.013 | LAIR2         | -3.35 | 0.029 |
| QSOX1      | -3.54 | 0.007 | GPC1          | -3.34 | 0.014 |
| ANO4       | -3.53 | 0.029 | SHH           | -3.34 | 0.029 |
| ELAVL3     | -3.53 | 0.045 | CLDN9         | -3.34 | 0.044 |
| SERPINE1   | -3.53 | 0.011 | FAM89A        | -3.34 | 0.018 |
| SOHLH1     | -3.53 | 0.023 | GRIN1         | -3.34 | 0.037 |
| NAP1L2     | -3.52 | 0.019 | NFATC1        | -3.34 | 0.028 |
| CDC42EP3   | -3.52 | 0.018 | ZCCHC12       | -3.34 | 0.024 |
| RAG1       | -3.51 | 0.014 | LOC102724084  | -3.34 | 0.006 |
| SYNPO      | -3.51 | 0.018 | SP6           | -3.34 | 0.038 |
| RIIAD1     | -3.51 | 0.011 | GPR161        | -3.34 | 0.044 |
| FLJ23867   | -3.51 | 0.011 | TLE6          | -3.32 | 0.005 |
| PROCR      | -3.51 | 0.036 | TLL2          | -3.32 | 0.019 |
| LGI3       | -3.50 | 0.005 | LMTK3         | -3.32 | 0.049 |
| MCTP1      | -3.50 | 0.047 | EXPH5         | -3.32 | 0.032 |
| LAPTM5     | -3.50 | 0.045 | FMNL1         | -3.32 | 0.048 |
| FAM150B    | -3.50 | 0.033 | MYH4          | -3.31 | 0.046 |
| ANKRD30BP2 | -3.50 | 0.046 | ABCA12        | -3.31 | 0.033 |
| MT2A       | -3.49 | 0.009 | DKFZp434J0226 | -3.31 | 0.040 |
| HAS3       | -3.49 | 0.037 | NPR1          | -3.31 | 0.008 |
| S100A11    | -3.49 | 0.022 | OTUB2         | -3.30 | 0.044 |
| GPR137B    | -3.49 | 0.029 | BCL2A1        | -3.30 | 0.040 |
| SRPX       | -3.49 | 0.015 | GJB3          | -3.30 | 0.038 |
| IL23A      | -3.49 | 0.035 | KSR2          | -3.30 | 0.037 |
| ABTB1      | -3.49 | 0.008 | TANC2         | -3.29 | 0.037 |
| TIMP4      | -3.49 | 0.039 | C15orf65      | -3.29 | 0.005 |
| PP14571    | -3.48 | 0.035 | TPBG          | -3.29 | 0.044 |

|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| PKIA         | -3.29 | 0.050 | FRMD5        | -3.16 | 0.034 |
| TLR6         | -3.29 | 0.022 | TUBB4A       | -3.15 | 0.045 |
| TNFSF9       | -3.28 | 0.018 | AQP3         | -3.15 | 0.004 |
| RTBDN        | -3.28 | 0.032 | SOX2         | -3.15 | 0.023 |
| RGS20        | -3.28 | 0.019 | C15orf52     | -3.15 | 0.005 |
| FOSL2        | -3.28 | 0.008 | CD24         | -3.15 | 0.024 |
| SLC9A2       | -3.28 | 0.021 | XKRX         | -3.15 | 0.013 |
| BCO2         | -3.27 | 0.034 | TAS1R3       | -3.14 | 0.012 |
| CLDN6        | -3.27 | 0.029 | ZRANB2-AS2   | -3.14 | 0.007 |
| FSD1         | -3.27 | 0.032 | CREB5        | -3.14 | 0.042 |
| SOCS2        | -3.27 | 0.043 | DACT3        | -3.14 | 0.033 |
| EREG         | -3.27 | 0.028 | TNFRSF25     | -3.14 | 0.032 |
| HOXA10       | -3.26 | 0.047 | OPRL1        | -3.14 | 0.013 |
| MIR100HG     | -3.26 | 0.006 | FAM172BP     | -3.14 | 0.024 |
| KLRC2        | -3.25 | 0.026 | VAT1L        | -3.14 | 0.021 |
| PPM1N        | -3.25 | 0.030 | GRIN3B       | -3.13 | 0.012 |
| C1QTNF9B     | -3.25 | 0.047 | LINC00607    | -3.13 | 0.045 |
| TCP11L2      | -3.25 | 0.035 | GOLGA7B      | -3.13 | 0.006 |
| CAV1         | -3.25 | 0.015 | OVGP1        | -3.13 | 0.041 |
| LRRC25       | -3.25 | 0.006 | LSP1         | -3.13 | 0.016 |
| HECA         | -3.25 | 0.013 | PDGFA        | -3.13 | 0.015 |
| CLTB         | -3.24 | 0.015 | KPNA7        | -3.13 | 0.029 |
| RNF103-CHMP3 | -3.24 | 0.016 | LOC101927476 | -3.13 | 0.033 |
| CPA5         | -3.24 | 0.026 | PNLDC1       | -3.12 | 0.042 |
| FHDC1        | -3.24 | 0.016 | COL7A1       | -3.12 | 0.005 |
| MAP3K7CL     | -3.24 | 0.012 | MAMLD1       | -3.12 | 0.044 |
| LOC388692    | -3.23 | 0.010 | CHI3L1       | -3.12 | 0.042 |
| C6orf223     | -3.23 | 0.026 | GSN-AS1      | -3.12 | 0.008 |
| NECAB2       | -3.23 | 0.036 | KAL1         | -3.12 | 0.037 |
| AXL          | -3.23 | 0.044 | BATF         | -3.11 | 0.018 |
| GAS6         | -3.23 | 0.017 | ARHGAP5-AS1  | -3.11 | 0.014 |
| GPR153       | -3.23 | 0.039 | C14orf105    | -3.11 | 0.035 |
| CNTD2        | -3.23 | 0.011 | KRT19        | -3.11 | 0.030 |
| OAS1         | -3.23 | 0.008 | KCNN2        | -3.11 | 0.004 |
| SLC1A7       | -3.23 | 0.022 | GPR176       | -3.11 | 0.023 |
| AGPAT4       | -3.22 | 0.038 | RAD51L3-RFFL | -3.11 | 0.037 |
| C14orf37     | -3.22 | 0.040 | CD3D         | -3.11 | 0.028 |
| ZFYVE28      | -3.22 | 0.041 | COL6A1       | -3.10 | 0.036 |
| SDCBP2       | -3.21 | 0.020 | PALD1        | -3.10 | 0.037 |
| FSTL3        | -3.21 | 0.021 | RGCC         | -3.10 | 0.018 |
| DUOX2        | -3.21 | 0.039 | C12orf75     | -3.09 | 0.038 |
| GPR82        | -3.21 | 0.043 | PAK1         | -3.09 | 0.037 |
| HCST         | -3.21 | 0.041 | GRIN2C       | -3.08 | 0.035 |
| KIF3C        | -3.21 | 0.045 | MT1X         | -3.08 | 0.003 |
| WDR78        | -3.20 | 0.038 | GMFG         | -3.08 | 0.014 |
| LRRC56       | -3.20 | 0.036 | GRIN2A       | -3.08 | 0.010 |
| GRID1        | -3.20 | 0.035 | GALNT7       | -3.07 | 0.018 |
| SPATA12      | -3.20 | 0.018 | SEL1L3       | -3.07 | 0.011 |
| UCN2         | -3.19 | 0.047 | PDE2A        | -3.07 | 0.029 |
| PPP2R3A      | -3.19 | 0.029 | HIST1H2AC    | -3.07 | 0.028 |
| ACHE         | -3.19 | 0.016 | BRSK1        | -3.07 | 0.017 |
| TMOD1        | -3.19 | 0.049 | B4GALNT2     | -3.07 | 0.026 |
| JUNB         | -3.19 | 0.011 | APBA2        | -3.06 | 0.032 |
| ARHGDIB      | -3.19 | 0.018 | CYP39A1      | -3.06 | 0.003 |
| KCNV2        | -3.18 | 0.008 | ADAMTS17     | -3.06 | 0.014 |
| TRAF1        | -3.18 | 0.026 | GOLGA8J      | -3.06 | 0.038 |
| NHLRC4       | -3.18 | 0.027 | NOX4         | -3.06 | 0.048 |
| RASGEF1B     | -3.18 | 0.036 | SLC9A7P1     | -3.05 | 0.012 |
| YTHDF3-AS1   | -3.18 | 0.012 | KIAA1462     | -3.05 | 0.040 |
| CTF1         | -3.18 | 0.023 | TMED7-TICAM2 | -3.05 | 0.021 |
| HES7         | -3.18 | 0.036 | C16orf98     | -3.04 | 0.004 |
| HSD3BP4      | -3.18 | 0.039 | SYTL2        | -3.04 | 0.017 |
| DCBLD2       | -3.17 | 0.011 | RGS10        | -3.04 | 0.006 |
| GRB10        | -3.17 | 0.047 | DMRTA1       | -3.04 | 0.035 |
| PAQR5        | -3.17 | 0.044 | LOC646626    | -3.04 | 0.033 |
| PDGFB        | -3.17 | 0.010 | EBI3         | -3.04 | 0.005 |
| SNCB         | -3.17 | 0.030 | GPR39        | -3.03 | 0.017 |
| CDKN2A       | -3.17 | 0.044 | FGD5         | -3.03 | 0.021 |
| CKMT1A       | -3.16 | 0.023 | BRINP2       | -3.02 | 0.049 |
| TCN2         | -3.16 | 0.012 | MVP          | -3.02 | 0.032 |
| MPP3         | -3.16 | 0.028 | TIMP1        | -3.02 | 0.007 |
| IL17RD       | -3.16 | 0.007 | LINC01272    | -3.02 | 0.023 |

|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| FIGNL2       | -3.02 | 0.046 | RASSF6       | -2.87 | 0.004 |
| GIPR         | -3.02 | 0.037 | LYL1         | -2.86 | 0.029 |
| PPP1R3B      | -3.01 | 0.016 | TRIM9        | -2.86 | 0.004 |
| APH1B        | -3.01 | 0.049 | KRT39        | -2.86 | 0.007 |
| C8orf48      | -3.01 | 0.027 | NACAD        | -2.86 | 0.031 |
| TMOD2        | -3.01 | 0.016 | ADAMTS10     | -2.86 | 0.024 |
| LOC100288866 | -3.00 | 0.007 | HRK          | -2.86 | 0.019 |
| EMR2         | -3.00 | 0.015 | TUBB6        | -2.86 | 0.004 |
| CYP26B1      | -3.00 | 0.033 | IGFL2        | -2.85 | 0.049 |
| FAM212A      | -3.00 | 0.041 | SERPINE2     | -2.85 | 0.003 |
| MSLN         | -3.00 | 0.040 | ANK1         | -2.85 | 0.040 |
| VSX1         | -2.99 | 0.047 | C3orf52      | -2.85 | 0.049 |
| GCSAM        | -2.99 | 0.035 | ANKRD29      | -2.85 | 0.010 |
| NYAP1        | -2.99 | 0.019 | LINC01239    | -2.85 | 0.031 |
| TNS4         | -2.99 | 0.018 | EID3         | -2.85 | 0.025 |
| GGT5         | -2.99 | 0.038 | PDP1         | -2.84 | 0.008 |
| SLC25A53     | -2.99 | 0.016 | FIBCD1       | -2.84 | 0.040 |
| FLJ32255     | -2.98 | 0.027 | DNAH5        | -2.84 | 0.023 |
| EGFR         | -2.98 | 0.028 | GPR17        | -2.84 | 0.049 |
| KLHL30       | -2.98 | 0.005 | TSPAN10      | -2.84 | 0.025 |
| KLHL29       | -2.98 | 0.028 | MITF         | -2.84 | 0.017 |
| TRIM6        | -2.97 | 0.040 | TMEM54       | -2.83 | 0.045 |
| MT1E         | -2.97 | 0.030 | TRPV2        | -2.83 | 0.048 |
| ZCCHC18      | -2.97 | 0.018 | CLCF1        | -2.83 | 0.003 |
| MAP1B        | -2.97 | 0.044 | CCDC80       | -2.83 | 0.050 |
| SLFN5        | -2.96 | 0.025 | AHRR         | -2.82 | 0.022 |
| IER5         | -2.96 | 0.048 | SPANXN5      | -2.82 | 0.016 |
| ICA1         | -2.96 | 0.027 | LY96         | -2.82 | 0.020 |
| MMP3         | -2.95 | 0.018 | PMAIP1       | -2.82 | 0.039 |
| SLC12A8      | -2.95 | 0.010 | RHCG         | -2.81 | 0.042 |
| S100A4       | -2.95 | 0.025 | LOC101926996 | -2.81 | 0.016 |
| CCDC37       | -2.95 | 0.036 | CCIN         | -2.81 | 0.032 |
| JOSD2        | -2.95 | 0.026 | MMP2         | -2.81 | 0.032 |
| SEC14L2      | -2.95 | 0.027 | RASSF5       | -2.81 | 0.049 |
| SPON2        | -2.95 | 0.017 | TUBB3        | -2.81 | 0.013 |
| ADPRH        | -2.94 | 0.042 | RRAS         | -2.81 | 0.010 |
| ATG9B        | -2.94 | 0.018 | FBXO32       | -2.81 | 0.010 |
| BDNF-AS      | -2.93 | 0.025 | SRPX2        | -2.81 | 0.006 |
| SNRPN        | -2.93 | 0.045 | MTMR11       | -2.81 | 0.022 |
| ZFHx4        | -2.93 | 0.032 | DUSP1        | -2.81 | 0.032 |
| LOC101926963 | -2.92 | 0.020 | RAPGEF3      | -2.80 | 0.029 |
| PCDHB9       | -2.92 | 0.044 | TMPRSS7      | -2.80 | 0.015 |
| TMEFF1       | -2.92 | 0.025 | UGT1A3       | -2.80 | 0.007 |
| HIST1H3E     | -2.92 | 0.024 | LINC00654    | -2.80 | 0.034 |
| TTC9         | -2.92 | 0.034 | TGM5         | -2.80 | 0.009 |
| ADAMTSL5     | -2.92 | 0.035 | CAPN8        | -2.80 | 0.003 |
| GCOM1        | -2.91 | 0.038 | PCDHA11      | -2.80 | 0.029 |
| ALPK2        | -2.91 | 0.045 | IFITM1       | -2.79 | 0.036 |
| SOGA3        | -2.91 | 0.004 | SLC4A8       | -2.79 | 0.024 |
| FAM46B       | -2.90 | 0.034 | PGM2L1       | -2.79 | 0.041 |
| ARL14        | -2.90 | 0.025 | MAFB         | -2.79 | 0.032 |
| USP44        | -2.90 | 0.025 | SERTAD1      | -2.78 | 0.017 |
| THSD4        | -2.90 | 0.023 | TRIM29       | -2.78 | 0.025 |
| TAGLN        | -2.90 | 0.038 | PALM2-AKAP2  | -2.78 | 0.006 |
| PARP8        | -2.90 | 0.050 | PHYHIP       | -2.78 | 0.029 |
| PHLDA2       | -2.90 | 0.046 | FAT2         | -2.78 | 0.013 |
| TRPV3        | -2.90 | 0.039 | SRGAP2C      | -2.78 | 0.050 |
| DUSP13       | -2.90 | 0.007 | CCR1         | -2.78 | 0.009 |
| CREB3L1      | -2.90 | 0.026 | SLC37A1      | -2.78 | 0.042 |
| INHBB        | -2.89 | 0.019 | MMP14        | -2.77 | 0.006 |
| IL12RB2      | -2.89 | 0.045 | CYP3A5       | -2.77 | 0.030 |
| MBOAT2       | -2.89 | 0.043 | ELFN1        | -2.77 | 0.016 |
| CCDC147      | -2.88 | 0.017 | ZNF618       | -2.77 | 0.007 |
| CNBD2        | -2.88 | 0.020 | CYP3A4       | -2.77 | 0.026 |
| CALY         | -2.88 | 0.024 | SLC43A3      | -2.77 | 0.025 |
| MT1G         | -2.88 | 0.022 | SLC16A4      | -2.77 | 0.018 |
| MXRA8        | -2.88 | 0.023 | PARD3-AS1    | -2.77 | 0.030 |
| TIMP2        | -2.87 | 0.028 | NRP1         | -2.77 | 0.050 |
| HAVCR1       | -2.87 | 0.044 | TFCP2L1      | -2.77 | 0.021 |
| CHGA         | -2.87 | 0.035 | LOC400684    | -2.76 | 0.036 |
| SNCA         | -2.87 | 0.003 | IL2RG        | -2.76 | 0.036 |
| C5AR2        | -2.87 | 0.037 | HOXB7        | -2.76 | 0.008 |

|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| TMSB10       | -2.76 | 0.011 | PSTPIP2      | -2.64 | 0.016 |
| PRRT4        | -2.75 | 0.014 | ANKRD30B     | -2.64 | 0.021 |
| GJC2         | -2.75 | 0.020 | IFI16        | -2.64 | 0.009 |
| ANGPTL4      | -2.75 | 0.038 | LOC101927136 | -2.64 | 0.038 |
| CLEC2L       | -2.74 | 0.018 | S100A10      | -2.63 | 0.026 |
| GBP3         | -2.74 | 0.020 | GRIN2D       | -2.63 | 0.046 |
| B3GALT2      | -2.74 | 0.026 | NKX3-2       | -2.63 | 0.025 |
| COX6B2       | -2.74 | 0.046 | LOC100287036 | -2.63 | 0.006 |
| ALPK3        | -2.74 | 0.021 | DNASE1L3     | -2.62 | 0.022 |
| NABP1        | -2.73 | 0.008 | LINC01094    | -2.62 | 0.032 |
| TRPM4        | -2.73 | 0.026 | B3GNT3       | -2.62 | 0.029 |
| SLC5A10      | -2.73 | 0.031 | DMRTA2       | -2.62 | 0.035 |
| ULBP3        | -2.73 | 0.044 | RNF157-AS1   | -2.62 | 0.039 |
| LINC01245    | -2.73 | 0.014 | STAT4        | -2.62 | 0.046 |
| BSPRY        | -2.73 | 0.002 | CCDC74A      | -2.62 | 0.038 |
| TUSC3        | -2.73 | 0.025 | KRT31        | -2.62 | 0.006 |
| COLQ         | -2.72 | 0.012 | PLEK2        | -2.62 | 0.035 |
| PLCH2        | -2.72 | 0.042 | IGFBP4       | -2.62 | 0.049 |
| RAB4B        | -2.72 | 0.028 | ARHGAP40     | -2.61 | 0.003 |
| TCAP         | -2.72 | 0.006 | HIST2H2BE    | -2.61 | 0.034 |
| OLAH         | -2.72 | 0.044 | ASIC4        | -2.61 | 0.018 |
| GNDF         | -2.71 | 0.040 | GTF2IRD2B    | -2.61 | 0.038 |
| LYPD1        | -2.71 | 0.007 | ZNF280A      | -2.61 | 0.015 |
| HAGHL        | -2.71 | 0.028 | DNAH12       | -2.61 | 0.004 |
| P4HA2-AS1    | -2.71 | 0.048 | BEAN1        | -2.60 | 0.033 |
| UGT1A1       | -2.71 | 0.044 | TNFRSF12A    | -2.60 | 0.047 |
| ASB4         | -2.71 | 0.006 | POLD4        | -2.60 | 0.019 |
| LOC100506499 | -2.71 | 0.012 | PPP1R27      | -2.60 | 0.041 |
| OLFM2        | -2.70 | 0.011 | FAM87B       | -2.60 | 0.006 |
| LUCAT1       | -2.70 | 0.038 | IGDCC4       | -2.60 | 0.036 |
| PCED1B       | -2.70 | 0.017 | GPR52        | -2.60 | 0.037 |
| ABRACL       | -2.70 | 0.021 | AFAP1L1      | -2.60 | 0.049 |
| LOC100506142 | -2.70 | 0.046 | PNCK         | -2.60 | 0.044 |
| ITGB3        | -2.69 | 0.024 | SPTB         | -2.60 | 0.007 |
| LYPD3        | -2.69 | 0.019 | MUC13        | -2.59 | 0.025 |
| SPTBN5       | -2.69 | 0.041 | MEG9         | -2.59 | 0.004 |
| NPR3         | -2.69 | 0.048 | TMEM190      | -2.59 | 0.022 |
| FGF9         | -2.69 | 0.044 | TMEM132A     | -2.59 | 0.005 |
| LIF          | -2.69 | 0.014 | ESRG         | -2.59 | 0.032 |
| VANGL2       | -2.69 | 0.022 | AKAP12       | -2.59 | 0.006 |
| CAMK2A       | -2.68 | 0.038 | DCLK2        | -2.59 | 0.043 |
| DGCR5        | -2.68 | 0.012 | LONRF2       | -2.58 | 0.012 |
| FAM134B      | -2.68 | 0.023 | NPDC1        | -2.58 | 0.035 |
| RBMS2        | -2.68 | 0.032 | LINC00663    | -2.58 | 0.035 |
| ALPPL2       | -2.68 | 0.031 | PTPN22       | -2.58 | 0.043 |
| WIPF1        | -2.68 | 0.042 | TNFSF8       | -2.58 | 0.027 |
| FLJ31356     | -2.68 | 0.048 | HIATL2       | -2.58 | 0.024 |
| PAX6         | -2.67 | 0.013 | ABLIM2       | -2.58 | 0.021 |
| DUSP18       | -2.67 | 0.045 | INA          | -2.57 | 0.037 |
| KCTD11       | -2.67 | 0.026 | PLEKHG5      | -2.57 | 0.032 |
| ZFHX2        | -2.67 | 0.012 | CMKLR1       | -2.57 | 0.043 |
| TMEM88       | -2.67 | 0.046 | UGT1A6       | -2.56 | 0.013 |
| TCF24        | -2.67 | 0.011 | ULK2         | -2.56 | 0.026 |
| EPHB6        | -2.67 | 0.046 | DGKH         | -2.56 | 0.041 |
| FAM83C-AS1   | -2.66 | 0.047 | MEI1         | -2.56 | 0.009 |
| DHDH         | -2.66 | 0.040 | PPP1R15A     | -2.56 | 0.040 |
| PLEKHN1      | -2.66 | 0.012 | PAPPA-AS1    | -2.56 | 0.029 |
| C6orf132     | -2.66 | 0.005 | SMIM6        | -2.55 | 0.027 |
| CADM4        | -2.66 | 0.009 | FSCN2        | -2.55 | 0.005 |
| SH2B2        | -2.66 | 0.043 | CCDC11       | -2.55 | 0.021 |
| DLL4         | -2.66 | 0.007 | LINC00862    | -2.55 | 0.031 |
| SH2D5        | -2.66 | 0.022 | LIM2         | -2.55 | 0.042 |
| IL1RAPL1     | -2.65 | 0.045 | SPACA6P      | -2.55 | 0.040 |
| NPAS1        | -2.65 | 0.021 | TUBAL3       | -2.55 | 0.010 |
| IFI27        | -2.65 | 0.008 | TSPAN11      | -2.55 | 0.003 |
| AIM1L        | -2.65 | 0.014 | LOC284837    | -2.54 | 0.020 |
| SLC52A1      | -2.65 | 0.008 | OR52N4       | -2.54 | 0.009 |
| SEPT5        | -2.65 | 0.042 | TUBB2A       | -2.54 | 0.042 |
| ITPR3        | -2.65 | 0.048 | PRR29        | -2.54 | 0.015 |
| FAM110B      | -2.64 | 0.024 | CLDN4        | -2.54 | 0.044 |
| LINC00624    | -2.64 | 0.020 | FAM110C      | -2.54 | 0.021 |
| LINC00511    | -2.64 | 0.032 | ITGA2        | -2.54 | 0.030 |

|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| LOC729683    | -2.53 | 0.048 | RGS9         | -2.41 | 0.012 |
| TCEAL7       | -2.53 | 0.048 | LOC283038    | -2.41 | 0.034 |
| SERINC2      | -2.52 | 0.019 | TUBA4A       | -2.41 | 0.025 |
| LINC00346    | -2.52 | 0.021 | LOC653653    | -2.41 | 0.028 |
| HES4         | -2.52 | 0.033 | GRAP         | -2.41 | 0.019 |
| SPTBN2       | -2.52 | 0.024 | ZIC2         | -2.41 | 0.017 |
| PLP1         | -2.51 | 0.024 | AGPAT2       | -2.41 | 0.042 |
| GRIK4        | -2.51 | 0.015 | DNAH7        | -2.40 | 0.045 |
| EGR3         | -2.51 | 0.013 | MFSD12       | -2.40 | 0.041 |
| ROBO3        | -2.51 | 0.005 | FAM19A2      | -2.40 | 0.045 |
| DNM1         | -2.51 | 0.037 | NDRG1        | -2.39 | 0.003 |
| TEP1         | -2.51 | 0.020 | IQSEC2       | -2.39 | 0.031 |
| TNIK         | -2.51 | 0.046 | SLC16A8      | -2.39 | 0.035 |
| FAIM2        | -2.51 | 0.047 | TPGS1        | -2.39 | 0.024 |
| GNG12        | -2.50 | 0.036 | CASC11       | -2.38 | 0.019 |
| TMEM154      | -2.50 | 0.033 | BLACAT1      | -2.38 | 0.025 |
| LPXN         | -2.50 | 0.017 | MRC1         | -2.38 | 0.014 |
| RELB         | -2.50 | 0.022 | JUN          | -2.38 | 0.026 |
| SH3PXD2B     | -2.49 | 0.011 | GPR56        | -2.38 | 0.018 |
| SFN          | -2.49 | 0.018 | TAGLN2       | -2.38 | 0.048 |
| ELK3         | -2.49 | 0.029 | TGM2         | -2.38 | 0.042 |
| ABCA4        | -2.49 | 0.008 | FAXC         | -2.38 | 0.003 |
| RBM20        | -2.49 | 0.009 | LMCD1        | -2.38 | 0.041 |
| LOC101927040 | -2.49 | 0.035 | NKAIN4       | -2.38 | 0.012 |
| RNF150       | -2.49 | 0.020 | MEX3B        | -2.37 | 0.026 |
| MTRNR2L6     | -2.48 | 0.009 | IER5L        | -2.37 | 0.015 |
| ARSI         | -2.48 | 0.023 | PCDHB15      | -2.37 | 0.044 |
| FAM78A       | -2.48 | 0.020 | ITGB8        | -2.37 | 0.034 |
| CDR2L        | -2.48 | 0.022 | LRRC15       | -2.37 | 0.049 |
| PCDHGA6      | -2.48 | 0.044 | FAM167B      | -2.37 | 0.026 |
| CXCR2        | -2.48 | 0.027 | CHRNA2       | -2.37 | 0.033 |
| CYR61        | -2.48 | 0.032 | CTBP2        | -2.37 | 0.033 |
| PIK3IP1      | -2.47 | 0.017 | CA12         | -2.36 | 0.036 |
| CSNK1G2-AS1  | -2.47 | 0.031 | KIAA1683     | -2.36 | 0.016 |
| LGSN         | -2.47 | 0.008 | ITGA9        | -2.36 | 0.021 |
| LOC101928710 | -2.47 | 0.007 | GOLGA8I      | -2.36 | 0.004 |
| ACRC         | -2.46 | 0.037 | BEX2         | -2.36 | 0.011 |
| VDR          | -2.46 | 0.022 | BFSP1        | -2.36 | 0.048 |
| RGS16        | -2.46 | 0.049 | PLA2G4F      | -2.36 | 0.035 |
| VPS37D       | -2.46 | 0.042 | FOLR3        | -2.36 | 0.016 |
| GPR37L1      | -2.46 | 0.047 | WNT2B        | -2.36 | 0.048 |
| RIMKLB       | -2.46 | 0.024 | HBEGF        | -2.36 | 0.041 |
| FAM214B      | -2.46 | 0.033 | SLC7A7       | -2.36 | 0.005 |
| CCDC148      | -2.46 | 0.032 | SPSB1        | -2.36 | 0.022 |
| LOC101927780 | -2.46 | 0.005 | STK17B       | -2.36 | 0.011 |
| PPP1R3F      | -2.46 | 0.032 | C6orf222     | -2.35 | 0.040 |
| PITPNC1      | -2.46 | 0.029 | FLJ16779     | -2.35 | 0.034 |
| SFMBT2       | -2.45 | 0.028 | CDK5R2       | -2.35 | 0.024 |
| COMP         | -2.45 | 0.037 | P2RX6        | -2.35 | 0.047 |
| PDLIM7       | -2.45 | 0.012 | UBAP1L       | -2.35 | 0.019 |
| C17orf103    | -2.45 | 0.043 | PRKAR2B      | -2.35 | 0.019 |
| RBM24        | -2.45 | 0.034 | HELZ2        | -2.35 | 0.042 |
| FGF17        | -2.44 | 0.048 | LAYN         | -2.35 | 0.011 |
| ZNF365       | -2.44 | 0.047 | ENKUR        | -2.35 | 0.005 |
| SPINK1       | -2.44 | 0.008 | MMP13        | -2.34 | 0.043 |
| TTLL7        | -2.44 | 0.009 | RAB9B        | -2.34 | 0.029 |
| CARD6        | -2.44 | 0.014 | SPEF1        | -2.34 | 0.027 |
| TSPAN15      | -2.44 | 0.044 | LAMA3        | -2.34 | 0.016 |
| SLC6A16      | -2.44 | 0.008 | LOC101059948 | -2.34 | 0.011 |
| DIRC3        | -2.44 | 0.020 | SHC2         | -2.34 | 0.024 |
| TMEM71       | -2.43 | 0.007 | PRODH        | -2.33 | 0.022 |
| LGALS7B      | -2.43 | 0.008 | DOCK11       | -2.33 | 0.023 |
| C2orf81      | -2.43 | 0.046 | EIF1B-AS1    | -2.33 | 0.049 |
| NR4A2        | -2.43 | 0.045 | IGSF3        | -2.33 | 0.041 |
| RBM11        | -2.43 | 0.037 | LOC644669    | -2.33 | 0.028 |
| NAP1L3       | -2.43 | 0.037 | FAM127A      | -2.33 | 0.004 |
| CHD5         | -2.43 | 0.034 | DLG4         | -2.33 | 0.044 |
| AQP7P3       | -2.42 | 0.035 | BRSK2        | -2.33 | 0.007 |
| LOC100507065 | -2.42 | 0.006 | RPP25        | -2.33 | 0.045 |
| KLHL33       | -2.42 | 0.032 | FNDC4        | -2.32 | 0.018 |
| LOC654342    | -2.42 | 0.013 | ABCA3        | -2.32 | 0.006 |
| CDH17        | -2.42 | 0.040 | CSF1         | -2.32 | 0.023 |

|               |       |       |              |       |       |
|---------------|-------|-------|--------------|-------|-------|
| CCDC114       | -2.32 | 0.018 | TEX40        | -2.24 | 0.012 |
| RFTN1         | -2.32 | 0.021 | CCDC103      | -2.23 | 0.042 |
| FLJ12825      | -2.32 | 0.007 | C19orf35     | -2.23 | 0.026 |
| TOLLIP-AS1    | -2.32 | 0.011 | SPIB         | -2.23 | 0.004 |
| CDKN1A        | -2.31 | 0.038 | SH3RF1       | -2.23 | 0.021 |
| BIN1          | -2.31 | 0.032 | MTCL1        | -2.23 | 0.028 |
| FAM171A2      | -2.31 | 0.042 | GPX8         | -2.23 | 0.037 |
| PLEKHM1       | -2.31 | 0.014 | FLJ31104     | -2.23 | 0.017 |
| TAS2R3        | -2.31 | 0.048 | ATP8B5P      | -2.22 | 0.020 |
| RPL36A-HNRNP2 | -2.30 | 0.006 | CASS4        | -2.22 | 0.038 |
| PWWP2B        | -2.30 | 0.049 | OSCAR        | -2.22 | 0.021 |
| MICAL1        | -2.30 | 0.023 | LINC00639    | -2.22 | 0.012 |
| C11orf91      | -2.30 | 0.027 | GJA3         | -2.21 | 0.012 |
| NR4A3         | -2.30 | 0.044 | CYTH4        | -2.21 | 0.045 |
| MACROD2-AS1   | -2.30 | 0.012 | LOC645166    | -2.21 | 0.044 |
| EPS8L1        | -2.30 | 0.014 | RHOC         | -2.21 | 0.024 |
| SAP30L-AS1    | -2.29 | 0.049 | MAP7D1       | -2.21 | 0.029 |
| BATF3         | -2.29 | 0.006 | KLHL24       | -2.21 | 0.012 |
| KLK7          | -2.29 | 0.042 | C7           | -2.21 | 0.003 |
| FLRT3         | -2.29 | 0.015 | ATF3         | -2.21 | 0.041 |
| DUOX1         | -2.29 | 0.015 | AGPAT9       | -2.21 | 0.037 |
| LINC00326     | -2.28 | 0.024 | PCDHB11      | -2.21 | 0.050 |
| NAGS          | -2.28 | 0.049 | HMOX1        | -2.21 | 0.028 |
| KLHL36        | -2.28 | 0.043 | MIR5047      | -2.20 | 0.028 |
| LCP1          | -2.28 | 0.034 | GMIP         | -2.20 | 0.027 |
| SLC2A1-AS1    | -2.28 | 0.037 | SYNGR1       | -2.20 | 0.003 |
| CTSO          | -2.28 | 0.031 | EHF          | -2.20 | 0.014 |
| IER2          | -2.28 | 0.008 | TSC22D3      | -2.20 | 0.030 |
| HRH1          | -2.28 | 0.023 | LIPE-AS1     | -2.20 | 0.047 |
| RND1          | -2.28 | 0.028 | PCDHB16      | -2.20 | 0.035 |
| LIMD2         | -2.27 | 0.028 | PLCD3        | -2.20 | 0.026 |
| LINC00535     | -2.27 | 0.028 | TMEM86A      | -2.19 | 0.011 |
| MPP2          | -2.27 | 0.035 | PRSS27       | -2.19 | 0.043 |
| CD22          | -2.27 | 0.037 | C14orf132    | -2.19 | 0.004 |
| LRP10         | -2.27 | 0.046 | LOC256880    | -2.19 | 0.050 |
| PALLD         | -2.27 | 0.030 | SAMD12       | -2.19 | 0.023 |
| GRIP2         | -2.27 | 0.026 | NBL1         | -2.19 | 0.021 |
| B9D2          | -2.27 | 0.043 | PCDHB10      | -2.19 | 0.020 |
| SLC14A2       | -2.27 | 0.010 | RGS2         | -2.19 | 0.012 |
| USP32P2       | -2.27 | 0.037 | PCDHGA4      | -2.19 | 0.033 |
| COL5A1        | -2.27 | 0.030 | FLYWCH1      | -2.18 | 0.039 |
| KRTAP5-1      | -2.27 | 0.029 | BCAR3        | -2.18 | 0.033 |
| BIN3-IT1      | -2.26 | 0.011 | MPPED2       | -2.18 | 0.046 |
| RNF215        | -2.26 | 0.039 | RBFOX3       | -2.18 | 0.049 |
| IDS           | -2.26 | 0.024 | SYTL3        | -2.18 | 0.048 |
| FSTL5         | -2.26 | 0.049 | ZNF579       | -2.18 | 0.037 |
| ESR1          | -2.26 | 0.030 | PIN4P1       | -2.18 | 0.044 |
| GABBR2        | -2.26 | 0.027 | LPHN3        | -2.17 | 0.008 |
| NEXN-AS1      | -2.26 | 0.002 | F2R          | -2.17 | 0.036 |
| PPP2R5B       | -2.26 | 0.036 | PIGR         | -2.17 | 0.014 |
| MESTIT1       | -2.26 | 0.039 | MDFI         | -2.17 | 0.017 |
| ISG20         | -2.26 | 0.046 | GRIK5        | -2.17 | 0.040 |
| FAM53A        | -2.26 | 0.025 | SAMD14       | -2.17 | 0.006 |
| B3GNT4        | -2.25 | 0.041 | MFSDB        | -2.17 | 0.023 |
| P2RX5         | -2.25 | 0.036 | DNMBP-AS1    | -2.17 | 0.026 |
| PBXIP1        | -2.25 | 0.028 | ELOVL4       | -2.17 | 0.040 |
| CACNG6        | -2.25 | 0.048 | IFI27L2      | -2.17 | 0.027 |
| ANKRD34A      | -2.25 | 0.005 | LOC102723483 | -2.17 | 0.015 |
| C21orf49      | -2.25 | 0.006 | SYPL2        | -2.17 | 0.019 |
| NES           | -2.25 | 0.004 | DPF3         | -2.17 | 0.046 |
| S100A16       | -2.25 | 0.044 | CSF3         | -2.16 | 0.025 |
| MYO1F         | -2.25 | 0.024 | PNMAL1       | -2.16 | 0.007 |
| CAPN11        | -2.25 | 0.041 | RDH5         | -2.16 | 0.022 |
| EFR3B         | -2.25 | 0.037 | HSD17B13     | -2.16 | 0.023 |
| CCDC175       | -2.24 | 0.017 | HIST1H2BG    | -2.16 | 0.006 |
| HOXA7         | -2.24 | 0.012 | KCTD16       | -2.16 | 0.048 |
| LYSMD2        | -2.24 | 0.048 | TIAM2        | -2.16 | 0.012 |
| TMCS          | -2.24 | 0.015 | PURG         | -2.16 | 0.015 |
| IL23R         | -2.24 | 0.042 | FAM157B      | -2.16 | 0.004 |
| BCAN          | -2.24 | 0.042 | LOC101927642 | -2.16 | 0.033 |
| CRHR1-IT1     | -2.24 | 0.048 | ZBTB20       | -2.15 | 0.020 |
| RARA-AS1      | -2.24 | 0.024 | FBLIM1       | -2.15 | 0.025 |

|              |       |       |             |       |       |
|--------------|-------|-------|-------------|-------|-------|
| HSPB6        | -2.15 | 0.040 | TM4SF19     | -2.06 | 0.008 |
| PCDHGB6      | -2.15 | 0.039 | TRIM46      | -2.06 | 0.045 |
| KIAA1656     | -2.15 | 0.012 | NKD2        | -2.05 | 0.041 |
| C10orf54     | -2.15 | 0.049 | EPPK1       | -2.05 | 0.035 |
| NR2F1-AS1    | -2.15 | 0.012 | ZDHHC24     | -2.05 | 0.032 |
| LOC101409256 | -2.15 | 0.043 | GCM1        | -2.05 | 0.003 |
| BHLHE40      | -2.15 | 0.044 | FBN2        | -2.05 | 0.006 |
| EVI2A        | -2.15 | 0.028 | TSC22D4     | -2.05 | 0.039 |
| NME3         | -2.15 | 0.003 | SLC45A3     | -2.05 | 0.011 |
| RIN1         | -2.14 | 0.043 | LINC00622   | -2.05 | 0.023 |
| CCDC151      | -2.14 | 0.009 | CALHM1      | -2.05 | 0.023 |
| GABARAPL1    | -2.14 | 0.045 | ECEL1       | -2.05 | 0.010 |
| MYT1         | -2.14 | 0.034 | TMEM159     | -2.05 | 0.049 |
| LPAR2        | -2.14 | 0.050 | SLC22A1     | -2.05 | 0.034 |
| ZNF396       | -2.14 | 0.021 | ANKRD24     | -2.05 | 0.048 |
| PCDH1        | -2.14 | 0.026 | BIRC3       | -2.04 | 0.036 |
| NXPH3        | -2.14 | 0.010 | TRPM2       | -2.04 | 0.003 |
| MAP3K14-AS1  | -2.13 | 0.006 | CDC42BPG    | -2.04 | 0.015 |
| LRMP         | -2.13 | 0.027 | IL1A        | -2.04 | 0.022 |
| MAPRE3       | -2.13 | 0.043 | OXCT2       | -2.04 | 0.003 |
| LOC101927755 | -2.13 | 0.023 | TTC39A      | -2.04 | 0.010 |
| C1orf140     | -2.13 | 0.045 | LSAMP       | -2.04 | 0.044 |
| TENM3        | -2.13 | 0.012 | ICAM2       | -2.04 | 0.013 |
| LOC391322    | -2.13 | 0.045 | HID1        | -2.04 | 0.033 |
| LOC101927257 | -2.13 | 0.031 | VSIG2       | -2.03 | 0.028 |
| PRKG2        | -2.13 | 0.017 | MBLAC1      | -2.03 | 0.018 |
| GLT1D1       | -2.12 | 0.010 | PALM2       | -2.03 | 0.046 |
| MYLK2        | -2.12 | 0.028 | LEPR        | -2.03 | 0.004 |
| ARHGEF37     | -2.12 | 0.048 | VAMP5       | -2.03 | 0.013 |
| PFKFB3       | -2.12 | 0.008 | CD52        | -2.03 | 0.027 |
| PATL2        | -2.12 | 0.036 | ANTXR2      | -2.03 | 0.047 |
| OXTR         | -2.12 | 0.012 | RNF222      | -2.02 | 0.022 |
| SH3BGR13     | -2.12 | 0.031 | ZNF837      | -2.02 | 0.014 |
| TNS1         | -2.11 | 0.022 | PLEKHG1     | -2.02 | 0.003 |
| CDK3         | -2.11 | 0.009 | TMEM102     | -2.02 | 0.004 |
| SERPINB8     | -2.11 | 0.034 | FHL3        | -2.02 | 0.040 |
| MGAT3        | -2.11 | 0.034 | NRG2        | -2.02 | 0.044 |
| ITGA10       | -2.11 | 0.029 | MT1F        | -2.02 | 0.006 |
| C22orf24     | -2.11 | 0.038 | SH3RF2      | -2.02 | 0.011 |
| MAFF         | -2.11 | 0.035 | HCN4        | -2.02 | 0.040 |
| PERM1        | -2.11 | 0.017 | GIP         | -2.01 | 0.034 |
| CARD10       | -2.11 | 0.031 | MOB3B       | -2.01 | 0.030 |
| CALCOCO1     | -2.11 | 0.020 | GCNT3       | -2.01 | 0.007 |
| BRWD1-IT2    | -2.11 | 0.019 | HIST1H2AE   | -2.01 | 0.020 |
| NHLRC1       | -2.10 | 0.039 | LHFPL4      | -2.01 | 0.010 |
| DAB2         | -2.10 | 0.031 | SMTN        | -2.01 | 0.008 |
| MAPK11       | -2.10 | 0.035 | LMF1-AS1    | -2.01 | 0.032 |
| SDK2         | -2.10 | 0.036 | POU4F1      | -2.01 | 0.014 |
| WSCD1        | -2.10 | 0.040 | DNAH3       | -2.01 | 0.026 |
| AGR2         | -2.09 | 0.046 | FABP3       | -2.01 | 0.023 |
| STAMBPL1     | -2.09 | 0.010 | S100A13     | -2.00 | 0.047 |
| NBPF9        | -2.09 | 0.018 | HIST1H2BD   | -2.00 | 0.016 |
| COL18A1-AS1  | -2.09 | 0.022 | ACAP1       | -2.00 | 0.012 |
| RRAGD        | -2.09 | 0.009 | FBP1        | -2.00 | 0.014 |
| CECR6        | -2.09 | 0.022 | SQRDL       | -2.00 | 0.022 |
| PPP1R14A     | -2.09 | 0.027 | VSTM4       | 2.00  | 0.019 |
| ICAM5        | -2.08 | 0.020 | KLHL32      | 2.00  | 0.047 |
| LOC101929746 | -2.08 | 0.048 | LRIT3       | 2.01  | 0.048 |
| CYP2S1       | -2.08 | 0.016 | CIT         | 2.01  | 0.044 |
| TMEM150B     | -2.08 | 0.022 | CDO1        | 2.01  | 0.037 |
| SH2D3A       | -2.08 | 0.022 | RAB4B-EGLN2 | 2.01  | 0.029 |
| MOSPD1       | -2.08 | 0.006 | RECQL4      | 2.01  | 0.020 |
| CD19         | -2.08 | 0.010 | PIPOX       | 2.01  | 0.040 |
| CCL22        | -2.08 | 0.035 | OXER1       | 2.01  | 0.005 |
| LHFPL5       | -2.07 | 0.027 | CCNF        | 2.02  | 0.043 |
| SLC6A19      | -2.07 | 0.010 | CHAF1B      | 2.02  | 0.037 |
| SPOCK2       | -2.07 | 0.037 | CKAP2       | 2.02  | 0.046 |
| LINC-PINT    | -2.07 | 0.018 | TCTE3       | 2.02  | 0.015 |
| ZNF775       | -2.06 | 0.031 | TYMS        | 2.02  | 0.004 |
| TRADD        | -2.06 | 0.015 | HIST1H2BM   | 2.02  | 0.013 |
| RPPH1        | -2.06 | 0.047 | HIST1H3C    | 2.03  | 0.024 |
| MYOM1        | -2.06 | 0.043 | UBE2T       | 2.03  | 0.045 |



|              |      |       |                   |      |       |
|--------------|------|-------|-------------------|------|-------|
| CCSAP        | 2.03 | 0.038 | CCDC69            | 2.12 | 0.026 |
| LOC645752    | 2.03 | 0.008 | SLC22A3           | 2.12 | 0.047 |
| CHP2         | 2.03 | 0.044 | SHCBP1            | 2.12 | 0.037 |
| ST6GAL1      | 2.03 | 0.041 | NCAPD2            | 2.13 | 0.029 |
| LIN9         | 2.03 | 0.013 | RAD54B            | 2.13 | 0.035 |
| AQP4-AS1     | 2.03 | 0.023 | SNORD17           | 2.13 | 0.023 |
| TUBE1        | 2.03 | 0.034 | PLCB4             | 2.13 | 0.009 |
| RSC1A1       | 2.04 | 0.036 | SKIDA1            | 2.14 | 0.032 |
| NFIA         | 2.04 | 0.003 | SLC47A1           | 2.14 | 0.025 |
| F11-AS1      | 2.04 | 0.050 | ZNF519            | 2.14 | 0.011 |
| LINC01119    | 2.04 | 0.014 | GMNN              | 2.14 | 0.048 |
| TTYH1        | 2.05 | 0.006 | RAVER2            | 2.14 | 0.011 |
| PLA2G2A      | 2.05 | 0.042 | C1orf131          | 2.14 | 0.029 |
| PIPSL        | 2.05 | 0.016 | SMC2              | 2.15 | 0.037 |
| LOC148709    | 2.05 | 0.028 | GDPD5             | 2.15 | 0.015 |
| PGM1         | 2.05 | 0.048 | ZNF833P           | 2.15 | 0.042 |
| LIFR-AS1     | 2.05 | 0.022 | FANCG             | 2.15 | 0.042 |
| RACGAP1      | 2.05 | 0.007 | CCDC144NL         | 2.15 | 0.039 |
| FMO5         | 2.05 | 0.003 | UGT2B28           | 2.15 | 0.032 |
| CCNE2        | 2.05 | 0.034 | SLC6A4            | 2.15 | 0.037 |
| CNGA1        | 2.06 | 0.029 | CYP4F12           | 2.16 | 0.046 |
| DEAR         | 2.06 | 0.020 | HMG2              | 2.16 | 0.030 |
| MTFR2        | 2.06 | 0.006 | FAM72D            | 2.16 | 0.010 |
| LOC102467081 | 2.06 | 0.031 | CPLX2             | 2.16 | 0.004 |
| GXYLT2       | 2.06 | 0.026 | MCM8              | 2.16 | 0.026 |
| CADPS2       | 2.06 | 0.017 | FEN1              | 2.16 | 0.007 |
| SFRP4        | 2.06 | 0.004 | PUS10             | 2.16 | 0.041 |
| WDHD1        | 2.06 | 0.008 | XAF1              | 2.16 | 0.035 |
| LOC100131257 | 2.06 | 0.015 | MASTL             | 2.17 | 0.012 |
| MTBP         | 2.07 | 0.035 | IQGAP2            | 2.17 | 0.049 |
| ALDOB        | 2.07 | 0.012 | FAM72B            | 2.17 | 0.022 |
| NAV2         | 2.07 | 0.003 | ITPK1-AS1         | 2.17 | 0.044 |
| RPGRIP1      | 2.07 | 0.021 | LSM6              | 2.18 | 0.036 |
| PECR         | 2.07 | 0.049 | LOC100505666      | 2.18 | 0.031 |
| IGF2         | 2.07 | 0.015 | LAMP3             | 2.18 | 0.049 |
| SPP1         | 2.07 | 0.011 | CCDC150           | 2.18 | 0.040 |
| DIAPH3       | 2.07 | 0.017 | CDCA5             | 2.18 | 0.016 |
| LOC642846    | 2.07 | 0.030 | MDFIC             | 2.18 | 0.032 |
| CDC20        | 2.07 | 0.006 | SLC25A34          | 2.18 | 0.003 |
| GFI1B        | 2.07 | 0.022 | AMER1             | 2.18 | 0.026 |
| FLJ41200     | 2.07 | 0.030 | ETNPPL            | 2.18 | 0.030 |
| KCNC3        | 2.08 | 0.038 | SERPIND1          | 2.18 | 0.048 |
| RDH16        | 2.08 | 0.029 | KLRD1             | 2.18 | 0.003 |
| POC1A        | 2.08 | 0.006 | MAGEA6            | 2.18 | 0.027 |
| FANCA        | 2.08 | 0.008 | ZNF730            | 2.19 | 0.049 |
| LOC100129518 | 2.08 | 0.016 | ZIM2              | 2.19 | 0.034 |
| LOC101929225 | 2.08 | 0.004 | LINC00870         | 2.19 | 0.013 |
| ECT2L        | 2.08 | 0.028 | MLANA             | 2.19 | 0.038 |
| WINK3        | 2.09 | 0.041 | ZNF90             | 2.19 | 0.004 |
| RAD9B        | 2.09 | 0.024 | SDC2              | 2.20 | 0.021 |
| NCMAP        | 2.09 | 0.018 | C8G               | 2.20 | 0.029 |
| LDLRAD4      | 2.09 | 0.041 | SCMH1             | 2.20 | 0.044 |
| ISOC1        | 2.09 | 0.006 | LOC102724927      | 2.20 | 0.008 |
| GLYCTK       | 2.09 | 0.025 | LIN54             | 2.21 | 0.050 |
| RGN          | 2.09 | 0.026 | MTUS1             | 2.21 | 0.030 |
| MNX1         | 2.09 | 0.043 | PCSK6             | 2.21 | 0.019 |
| TM4SF20      | 2.10 | 0.032 | FITM1             | 2.22 | 0.010 |
| IGSF23       | 2.10 | 0.042 | TERT              | 2.22 | 0.005 |
| C21orf58     | 2.10 | 0.016 | CENPJ             | 2.22 | 0.007 |
| NUCB2        | 2.10 | 0.044 | ACSL4             | 2.22 | 0.028 |
| HIST1H3B     | 2.10 | 0.042 | GTF2H2C,GTF2H2C_2 | 2.23 | 0.040 |
| BCL2         | 2.10 | 0.038 | SOAT2             | 2.23 | 0.013 |
| KIF14        | 2.10 | 0.007 | CLDN10            | 2.23 | 0.040 |
| ARHGAP11B    | 2.11 | 0.022 | ORC6              | 2.23 | 0.017 |
| NCAPG2       | 2.11 | 0.019 | LIN52             | 2.23 | 0.043 |
| TMEM135      | 2.11 | 0.025 | SGK3              | 2.23 | 0.010 |
| HLF          | 2.11 | 0.046 | DAK               | 2.23 | 0.036 |
| F11          | 2.11 | 0.026 | EPN3              | 2.23 | 0.007 |
| KLHL13       | 2.11 | 0.031 | TMEM220-AS1       | 2.23 | 0.031 |
| ITIH2        | 2.11 | 0.038 | SFXN2             | 2.23 | 0.024 |
| IL22RA1      | 2.12 | 0.013 | CENPP             | 2.24 | 0.043 |
| SNX20        | 2.12 | 0.006 | LINC00907         | 2.24 | 0.036 |

|              |      |       |               |      |       |
|--------------|------|-------|---------------|------|-------|
| ALDH1A1      | 2.24 | 0.003 | CENPQ         | 2.36 | 0.034 |
| MSH4         | 2.25 | 0.047 | MASP2         | 2.36 | 0.023 |
| HELLS        | 2.25 | 0.050 | SLC6A12       | 2.37 | 0.022 |
| MAN1A1       | 2.25 | 0.040 | TMEM97        | 2.37 | 0.008 |
| LINC01277    | 2.25 | 0.037 | TROAP         | 2.38 | 0.036 |
| CCDC144CP    | 2.25 | 0.005 | LYAR          | 2.38 | 0.049 |
| SND1-IT1     | 2.25 | 0.050 | WDR88         | 2.38 | 0.040 |
| ASS1         | 2.25 | 0.034 | CAMK2B        | 2.38 | 0.003 |
| TFAP4        | 2.25 | 0.028 | MIS18A        | 2.38 | 0.030 |
| BHMT         | 2.26 | 0.036 | DPEP1         | 2.38 | 0.025 |
| NUP62CL      | 2.26 | 0.014 | ABHD1         | 2.39 | 0.004 |
| TLR2         | 2.26 | 0.014 | RAD51         | 2.39 | 0.046 |
| ERVFRD-1     | 2.27 | 0.023 | XBP1          | 2.39 | 0.022 |
| KIRREL3      | 2.27 | 0.027 | DHRS2         | 2.39 | 0.034 |
| LNP1         | 2.27 | 0.027 | MOGAT1        | 2.39 | 0.042 |
| CKAP2L       | 2.27 | 0.031 | CEP55         | 2.39 | 0.032 |
| EZH2         | 2.27 | 0.009 | CCDC170       | 2.39 | 0.023 |
| GNMT         | 2.27 | 0.010 | MCM5          | 2.39 | 0.014 |
| SLC10A5      | 2.27 | 0.025 | MNS1          | 2.39 | 0.044 |
| USP1         | 2.28 | 0.010 | ANTXR1        | 2.39 | 0.040 |
| RIBC1        | 2.28 | 0.006 | AKR1B15       | 2.40 | 0.007 |
| SGOL2        | 2.28 | 0.046 | PABPC1P2      | 2.40 | 0.041 |
| ACAT2        | 2.28 | 0.004 | ABHD12B       | 2.40 | 0.004 |
| CFI          | 2.28 | 0.023 | BRCA1         | 2.40 | 0.034 |
| ZNF257       | 2.28 | 0.041 | TPX2          | 2.40 | 0.023 |
| KIF24        | 2.29 | 0.012 | SKA1          | 2.41 | 0.022 |
| POLD3        | 2.29 | 0.018 | SNORD89       | 2.41 | 0.043 |
| SLC16A7      | 2.29 | 0.005 | CEP152        | 2.41 | 0.016 |
| ELOVL2-AS1   | 2.29 | 0.015 | LOC101930452  | 2.42 | 0.033 |
| CATSPER2     | 2.29 | 0.049 | DONSON        | 2.42 | 0.041 |
| SLC26A3      | 2.29 | 0.004 | KNTC1         | 2.42 | 0.046 |
| SLC38A3      | 2.30 | 0.006 | BARD1         | 2.42 | 0.017 |
| CD101        | 2.30 | 0.050 | TCEA3         | 2.42 | 0.005 |
| KAZALD1      | 2.30 | 0.029 | TET1          | 2.42 | 0.041 |
| FANCB        | 2.30 | 0.021 | AIF1L         | 2.42 | 0.032 |
| POLA1        | 2.30 | 0.017 | AURKA         | 2.42 | 0.018 |
| PRG4         | 2.30 | 0.023 | SEPT14        | 2.42 | 0.006 |
| NOX1         | 2.31 | 0.021 | WDR62         | 2.42 | 0.050 |
| LOC101929010 | 2.31 | 0.023 | ADIRF         | 2.43 | 0.040 |
| DEPDC1B      | 2.31 | 0.025 | MCM4          | 2.43 | 0.043 |
| RNF139-AS1   | 2.31 | 0.036 | WDR11-AS1     | 2.43 | 0.010 |
| CCDC183-AS1  | 2.32 | 0.030 | IQGAP3        | 2.43 | 0.038 |
| SLC38A4      | 2.32 | 0.042 | KIAA1524      | 2.44 | 0.031 |
| LOC151475    | 2.32 | 0.026 | ORM2          | 2.44 | 0.024 |
| NADK2        | 2.32 | 0.046 | IL11RA        | 2.45 | 0.049 |
| ANKRD20A8P   | 2.32 | 0.021 | NASP          | 2.45 | 0.049 |
| ACSM1        | 2.33 | 0.016 | VRK1          | 2.45 | 0.039 |
| MPHOSPH10    | 2.33 | 0.005 | TACC3         | 2.45 | 0.025 |
| EPB41L4A     | 2.33 | 0.026 | FAM72A,FAM72C | 2.45 | 0.048 |
| SPC24        | 2.33 | 0.011 | OIP5          | 2.45 | 0.044 |
| AUNIP        | 2.33 | 0.008 | G6PC          | 2.46 | 0.036 |
| CDCA2        | 2.34 | 0.009 | MGC12916      | 2.46 | 0.026 |
| C2orf48      | 2.34 | 0.041 | C1orf112      | 2.46 | 0.015 |
| C1orf168     | 2.34 | 0.041 | CCDC18        | 2.46 | 0.023 |
| HOXA2        | 2.34 | 0.030 | SLC39A14      | 2.47 | 0.016 |
| TRIP13       | 2.34 | 0.036 | LCN2          | 2.47 | 0.013 |
| LOC101927572 | 2.34 | 0.044 | RHO           | 2.48 | 0.039 |
| PCDP1        | 2.34 | 0.049 | RFC3          | 2.48 | 0.039 |
| LRIG1        | 2.34 | 0.008 | LOC100507564  | 2.48 | 0.050 |
| IDH1         | 2.34 | 0.048 | LRIG3         | 2.48 | 0.007 |
| SASS6        | 2.35 | 0.031 | CHEK2         | 2.48 | 0.032 |
| AASS         | 2.35 | 0.042 | CHKB-CPT1B    | 2.48 | 0.009 |
| PARBPB       | 2.35 | 0.030 | BUB1B         | 2.50 | 0.008 |
| C6           | 2.35 | 0.040 | RFC5          | 2.50 | 0.022 |
| C11orf82     | 2.35 | 0.025 | GPR65         | 2.50 | 0.028 |
| MCM2         | 2.35 | 0.016 | MAL2          | 2.50 | 0.017 |
| MCM7         | 2.35 | 0.049 | VN1R2         | 2.50 | 0.010 |
| KDELC1       | 2.36 | 0.041 | GAS2L3        | 2.50 | 0.035 |
| TUB          | 2.36 | 0.046 | GHR           | 2.51 | 0.035 |
| LOC100506125 | 2.36 | 0.037 | BUB1          | 2.51 | 0.009 |
| CLDN14       | 2.36 | 0.015 | SRRM3         | 2.51 | 0.004 |
| FANCD2       | 2.36 | 0.034 | KIF22         | 2.51 | 0.039 |

|              |      |       |              |      |       |
|--------------|------|-------|--------------|------|-------|
| GAS2         | 2.52 | 0.006 | FAM19A4      | 2.67 | 0.017 |
| RRM2         | 2.52 | 0.018 | CYP7B1       | 2.67 | 0.040 |
| NEK10        | 2.52 | 0.022 | SPDL1        | 2.67 | 0.038 |
| LINC00507    | 2.52 | 0.026 | GNG3         | 2.68 | 0.040 |
| LOC100129316 | 2.52 | 0.026 | HJURP        | 2.68 | 0.028 |
| ALDH6A1      | 2.52 | 0.047 | SERPINA3     | 2.69 | 0.003 |
| IAPP         | 2.52 | 0.048 | KIF4A        | 2.69 | 0.003 |
| ZNF33BP1     | 2.52 | 0.012 | LOC101928865 | 2.70 | 0.030 |
| PSIP1        | 2.53 | 0.028 | MMS22L       | 2.70 | 0.047 |
| EPHX2        | 2.54 | 0.038 | CTAGE10P     | 2.70 | 0.003 |
| LOC102467073 | 2.54 | 0.035 | EME1         | 2.70 | 0.031 |
| UROC1        | 2.54 | 0.042 | DBF4         | 2.70 | 0.024 |
| POLE         | 2.54 | 0.022 | HIST1H1E     | 2.70 | 0.015 |
| LOC102800310 | 2.54 | 0.028 | ALS2CR12     | 2.70 | 0.032 |
| UBE2C        | 2.54 | 0.042 | PRR11        | 2.71 | 0.034 |
| MMP17        | 2.55 | 0.026 | CCDC121      | 2.71 | 0.014 |
| TTK          | 2.55 | 0.017 | FAM151A      | 2.71 | 0.035 |
| LINC00668    | 2.55 | 0.015 | HADH         | 2.71 | 0.013 |
| JADE1        | 2.56 | 0.006 | PAQR8        | 2.71 | 0.048 |
| AVIL         | 2.56 | 0.005 | PRDM6        | 2.72 | 0.027 |
| SERPINA7     | 2.56 | 0.026 | MCM3         | 2.72 | 0.021 |
| TBX4         | 2.56 | 0.043 | ANG          | 2.73 | 0.012 |
| CENPI        | 2.57 | 0.022 | E2F1         | 2.73 | 0.017 |
| FANCI        | 2.57 | 0.020 | RPS6KA3      | 2.74 | 0.030 |
| CDKN3        | 2.57 | 0.022 | ADAM11       | 2.75 | 0.030 |
| NFKBIZ       | 2.57 | 0.030 | CHAF1A       | 2.76 | 0.028 |
| CA5A         | 2.57 | 0.035 | GIN52        | 2.76 | 0.006 |
| SEMA4A       | 2.58 | 0.031 | RNF133       | 2.76 | 0.042 |
| PROZ         | 2.58 | 0.019 | RNASE4       | 2.76 | 0.021 |
| ERCC6L       | 2.58 | 0.023 | CENPK        | 2.77 | 0.033 |
| WDR76        | 2.58 | 0.021 | MCM6         | 2.77 | 0.022 |
| MELK         | 2.58 | 0.045 | CCDC34       | 2.79 | 0.012 |
| JAKMIP2      | 2.58 | 0.025 | NID1         | 2.79 | 0.026 |
| LINC01252    | 2.59 | 0.006 | SPC25        | 2.79 | 0.025 |
| CASC5        | 2.59 | 0.036 | ARG1         | 2.79 | 0.014 |
| NAV2-AS2     | 2.59 | 0.020 | LOC100507462 | 2.79 | 0.023 |
| ORM1         | 2.59 | 0.034 | BLM          | 2.79 | 0.011 |
| F7           | 2.59 | 0.037 | GIMAP2       | 2.80 | 0.038 |
| ONECUT1      | 2.59 | 0.044 | A2M          | 2.80 | 0.046 |
| PHGDH        | 2.59 | 0.026 | CDC25A       | 2.80 | 0.048 |
| CCNB1        | 2.59 | 0.029 | MEP1A        | 2.81 | 0.026 |
| GSG2         | 2.59 | 0.008 | ESPL1        | 2.81 | 0.024 |
| CCDC138      | 2.60 | 0.032 | SAA4         | 2.81 | 0.018 |
| LOC100506321 | 2.60 | 0.020 | INHA         | 2.81 | 0.021 |
| RMI2         | 2.60 | 0.014 | KLF15        | 2.81 | 0.042 |
| SPATA21      | 2.60 | 0.041 | NCAPG        | 2.82 | 0.031 |
| BORA         | 2.61 | 0.039 | SHANK2-AS1   | 2.82 | 0.007 |
| TMPO-AS1     | 2.61 | 0.031 | FER1L5       | 2.82 | 0.033 |
| HIST1H2BH    | 2.62 | 0.021 | VSIG1        | 2.82 | 0.027 |
| PPARGC1A     | 2.62 | 0.008 | BRCA2        | 2.82 | 0.031 |
| GSTA2        | 2.62 | 0.044 | ITIH4        | 2.82 | 0.025 |
| UHRF1        | 2.62 | 0.034 | MAT1A        | 2.83 | 0.028 |
| C4BPA        | 2.62 | 0.005 | SCML2        | 2.83 | 0.004 |
| APOA5        | 2.62 | 0.049 | CC2D2B       | 2.83 | 0.045 |
| SMC1B        | 2.63 | 0.042 | DLEU2        | 2.83 | 0.048 |
| FAM3B        | 2.63 | 0.039 | PSRC1        | 2.83 | 0.043 |
| FAM20A       | 2.63 | 0.032 | LINC00864    | 2.84 | 0.048 |
| FAM64A       | 2.64 | 0.025 | NAALADL1     | 2.84 | 0.004 |
| MPV17L       | 2.64 | 0.036 | CDC6         | 2.84 | 0.043 |
| BIRC5        | 2.64 | 0.014 | THRSP        | 2.85 | 0.003 |
| PNLIPRP2     | 2.64 | 0.041 | ID1          | 2.85 | 0.043 |
| TNFSF10      | 2.64 | 0.011 | CLSPN        | 2.85 | 0.027 |
| ZGRF1        | 2.65 | 0.044 | YBX2         | 2.85 | 0.008 |
| ADD3-AS1     | 2.65 | 0.027 | ZWINT        | 2.86 | 0.038 |
| NPIP6        | 2.65 | 0.008 | ATAD5        | 2.87 | 0.029 |
| RTKN2        | 2.66 | 0.040 | GATA5        | 2.88 | 0.048 |
| E2F2         | 2.67 | 0.038 | ANLN         | 2.88 | 0.025 |
| BPIFB2       | 2.67 | 0.048 | CPN2         | 2.88 | 0.031 |
| MAP2K6       | 2.67 | 0.009 | DLGAP5       | 2.88 | 0.014 |
| SLC22A10     | 2.67 | 0.006 | A1BG-AS1     | 2.89 | 0.024 |
| FBXL22       | 2.67 | 0.023 | SLC22A9      | 2.89 | 0.009 |
| FAM181A      | 2.67 | 0.048 | IL1RAP       | 2.89 | 0.015 |

|                     |      |       |                |      |       |
|---------------------|------|-------|----------------|------|-------|
| ARHGAP11A           | 2.89 | 0.029 | GIN51          | 3.10 | 0.036 |
| CPN1                | 2.89 | 0.042 | PLK1           | 3.11 | 0.021 |
| GLUD1               | 2.89 | 0.044 | SERPINA6       | 3.11 | 0.006 |
| ORC1                | 2.89 | 0.030 | LOC102723824   | 3.11 | 0.010 |
| SMCO3               | 2.89 | 0.037 | CDC25C         | 3.11 | 0.031 |
| PRIM1               | 2.89 | 0.046 | FBXO5          | 3.13 | 0.041 |
| FAM83D              | 2.90 | 0.049 | ACADSB         | 3.13 | 0.038 |
| C8orf49             | 2.90 | 0.019 | SERPINC1       | 3.13 | 0.004 |
| PRC1                | 2.90 | 0.013 | GTSE1          | 3.13 | 0.023 |
| SGOL1               | 2.91 | 0.003 | SLC13A3        | 3.14 | 0.045 |
| SLC23A1             | 2.91 | 0.036 | COL2A1         | 3.14 | 0.043 |
| CDCA7               | 2.92 | 0.039 | COBLL1         | 3.14 | 0.018 |
| HULC                | 2.92 | 0.029 | FAM215A        | 3.14 | 0.045 |
| STIL                | 2.92 | 0.039 | PEG3-AS1       | 3.15 | 0.005 |
| SLC2A2              | 2.92 | 0.028 | MPP7           | 3.15 | 0.016 |
| CENPE               | 2.93 | 0.037 | LGALS2         | 3.15 | 0.027 |
| RBP4                | 2.93 | 0.038 | DIO1           | 3.15 | 0.014 |
| TFR2                | 2.94 | 0.011 | NUSAP1         | 3.16 | 0.014 |
| GPT                 | 2.94 | 0.048 | CDCA3          | 3.16 | 0.048 |
| CCL20               | 2.94 | 0.041 | PMCH           | 3.16 | 0.021 |
| MAD2L1              | 2.95 | 0.038 | DSCC1          | 3.16 | 0.011 |
| CENPF               | 2.95 | 0.022 | KIF20B         | 3.17 | 0.045 |
| LOC100288637        | 2.95 | 0.016 | PEG3           | 3.17 | 0.020 |
| LMNB1               | 2.95 | 0.032 | AIM1           | 3.17 | 0.013 |
| MPC1                | 2.95 | 0.027 | APOC3          | 3.17 | 0.025 |
| CCDC173             | 2.96 | 0.038 | ARMC12         | 3.18 | 0.012 |
| TRIM61              | 2.97 | 0.028 | DTL            | 3.18 | 0.033 |
| CSF3R               | 2.97 | 0.020 | SERPINF2       | 3.19 | 0.019 |
| CENPA               | 2.97 | 0.040 | LOC101927274   | 3.19 | 0.028 |
| NEK2                | 2.97 | 0.019 | KIAA0101       | 3.20 | 0.045 |
| METTTL7A            | 2.97 | 0.021 | POLE2          | 3.21 | 0.047 |
| HHEX                | 2.98 | 0.044 | ASF1B          | 3.21 | 0.046 |
| LINC00669           | 2.98 | 0.007 | BRIP1          | 3.21 | 0.021 |
| CENPU               | 2.98 | 0.035 | CDH5           | 3.21 | 0.042 |
| C19orf80            | 2.98 | 0.024 | SGOL1-AS1      | 3.22 | 0.006 |
| ANKRD20A1,ANKRD20A3 | 2.98 | 0.040 | FOXM1          | 3.22 | 0.018 |
| FREM1               | 2.99 | 0.033 | MLXIPL         | 3.23 | 0.039 |
| DHFR                | 2.99 | 0.021 | HMMR           | 3.23 | 0.018 |
| C1orf216            | 3.00 | 0.040 | REEP1          | 3.24 | 0.049 |
| DEPDC1              | 3.00 | 0.023 | NCAPH          | 3.24 | 0.012 |
| FAT4                | 3.00 | 0.039 | AURKB          | 3.24 | 0.015 |
| NDRG2               | 3.01 | 0.042 | POLQ           | 3.25 | 0.005 |
| KIF23               | 3.01 | 0.044 | TMEM110-MUSTN1 | 3.26 | 0.031 |
| LOC101928292        | 3.01 | 0.031 | SCOC-AS1       | 3.27 | 0.042 |
| C2orf72             | 3.02 | 0.017 | ESCO2          | 3.28 | 0.036 |
| PIF1                | 3.02 | 0.050 | PBK            | 3.28 | 0.016 |
| DEPDC1-AS1          | 3.03 | 0.006 | ALDH1L1        | 3.28 | 0.013 |
| CTGLF12P            | 3.03 | 0.004 | CCDC152        | 3.28 | 0.031 |
| HNF1A-AS1           | 3.03 | 0.042 | GK3P           | 3.28 | 0.013 |
| VAV3                | 3.04 | 0.010 | MROH8          | 3.29 | 0.027 |
| NR2F2-AS1           | 3.04 | 0.048 | ELOVL2         | 3.29 | 0.038 |
| SPAG5               | 3.04 | 0.005 | ASPM           | 3.29 | 0.048 |
| CLDN5               | 3.04 | 0.029 | KIF2C          | 3.30 | 0.011 |
| NDC80               | 3.04 | 0.006 | NAALAD2        | 3.30 | 0.039 |
| DUSP9               | 3.05 | 0.023 | LOC283710      | 3.30 | 0.040 |
| LOC100287098        | 3.05 | 0.010 | CCDC183        | 3.31 | 0.022 |
| MARC1               | 3.05 | 0.043 | UPB1           | 3.32 | 0.048 |
| SMC4                | 3.05 | 0.010 | CPB2           | 3.33 | 0.013 |
| CCNB2               | 3.06 | 0.048 | SLC6A2         | 3.34 | 0.029 |
| LOC101929057        | 3.06 | 0.026 | LINC00854      | 3.35 | 0.045 |
| CAMKV               | 3.07 | 0.050 | XRCC2          | 3.35 | 0.030 |
| TPPA                | 3.08 | 0.045 | LOX            | 3.35 | 0.038 |
| FAM72C              | 3.08 | 0.032 | AHSG           | 3.36 | 0.023 |
| CP                  | 3.08 | 0.048 | ZNF415         | 3.36 | 0.015 |
| FUNDC2P2            | 3.08 | 0.026 | MND1           | 3.36 | 0.008 |
| KIF18A              | 3.08 | 0.046 | ZNF367         | 3.36 | 0.024 |
| CDCA8               | 3.08 | 0.013 | PLK4           | 3.37 | 0.022 |
| RAD51AP1            | 3.08 | 0.027 | HS3ST5         | 3.38 | 0.037 |
| ATAD2               | 3.08 | 0.030 | SOWAHA         | 3.39 | 0.014 |
| ATCAY               | 3.10 | 0.026 | SLC19A3        | 3.39 | 0.007 |
| PKLR                | 3.10 | 0.006 | PIP5K1B        | 3.41 | 0.033 |
| ACSM5               | 3.10 | 0.019 | LOC101927018   | 3.41 | 0.010 |

|          |      |       |                     |       |       |
|----------|------|-------|---------------------|-------|-------|
| CDK1     | 3.42 | 0.025 | ANGPTL3             | 4.10  | 0.035 |
| MIMT1    | 3.42 | 0.021 | SLCO4C1             | 4.12  | 0.011 |
| ODAM     | 3.42 | 0.030 | IGSF1               | 4.12  | 0.020 |
| SEPP1    | 3.43 | 0.028 | HOXD1               | 4.13  | 0.041 |
| CDC45    | 3.44 | 0.048 | FBXO43              | 4.14  | 0.019 |
| MYBL2    | 3.44 | 0.048 | LOC441454           | 4.16  | 0.008 |
| C2CD4A   | 3.44 | 0.038 | NUGGC               | 4.18  | 0.036 |
| APOB     | 3.45 | 0.016 | DGKK                | 4.19  | 0.028 |
| KIF20A   | 3.47 | 0.044 | E2F8                | 4.19  | 0.028 |
| MCM10    | 3.48 | 0.049 | APOH                | 4.20  | 0.007 |
| CYP8B1   | 3.48 | 0.006 | ADH4                | 4.23  | 0.032 |
| CD302    | 3.49 | 0.046 | SLC13A5             | 4.25  | 0.047 |
| MKI67    | 3.49 | 0.038 | AQP9                | 4.26  | 0.017 |
| RAD54L   | 3.51 | 0.009 | SAA2                | 4.26  | 0.035 |
| SNORA40  | 3.51 | 0.037 | CD14                | 4.26  | 0.041 |
| PRODH2   | 3.52 | 0.032 | DLEU2L              | 4.27  | 0.043 |
| ACE2     | 3.52 | 0.013 | SULT2A1             | 4.29  | 0.039 |
| ZCCHC2   | 3.52 | 0.041 | EXO1                | 4.29  | 0.045 |
| KIF18B   | 3.54 | 0.027 | DKK4                | 4.29  | 0.006 |
| ZBTB7C   | 3.55 | 0.043 | HTR3B               | 4.31  | 0.019 |
| NUF2     | 3.58 | 0.040 | ATP2B2              | 4.31  | 0.021 |
| PAH      | 3.59 | 0.019 | NT5C1B-RDH14        | 4.33  | 0.040 |
| FGFR2    | 3.59 | 0.034 | ANGPTL1             | 4.35  | 0.011 |
| PRC1-AS1 | 3.60 | 0.026 | ACSM2B              | 4.36  | 0.043 |
| AGXT     | 3.60 | 0.018 | FABP2               | 4.37  | 0.009 |
| ANKRD19P | 3.61 | 0.027 | ALDH8A1             | 4.39  | 0.034 |
| DPYD     | 3.61 | 0.005 | AFP                 | 4.39  | 0.032 |
| FAM111B  | 3.61 | 0.047 | OLFML1              | 4.39  | 0.023 |
| ID4      | 3.62 | 0.007 | AKR1D1              | 4.42  | 0.039 |
| SMAD9    | 3.62 | 0.010 | SLC22A7             | 4.50  | 0.043 |
| IPO9-AS1 | 3.62 | 0.039 | GSTA1               | 4.51  | 0.026 |
| ASAH2    | 3.63 | 0.034 | PCSK9               | 4.53  | 0.030 |
| CYP7A1   | 3.63 | 0.050 | C8A                 | 4.55  | 0.025 |
| HAGLR    | 3.64 | 0.005 | CCDC180             | 4.55  | 0.034 |
| TOP2A    | 3.64 | 0.004 | SLC5A9              | 4.61  | 0.034 |
| PRIMA1   | 3.64 | 0.050 | SLC17A2             | 4.63  | 0.023 |
| PGC      | 3.64 | 0.031 | SCHLAP1             | 4.63  | 0.049 |
| KIF11    | 3.65 | 0.014 | ZAN                 | 4.66  | 0.041 |
| SCARA3   | 3.66 | 0.046 | FABP1               | 4.67  | 0.039 |
| PPP1R1A  | 3.67 | 0.014 | EEF1E1-BLOC1S5      | 4.79  | 0.007 |
| TF       | 3.67 | 0.014 | MIXL1               | 4.80  | 0.030 |
| MYH7B    | 3.68 | 0.010 | SERPINA11           | 4.80  | 0.034 |
| ENPP3    | 3.68 | 0.037 | ADH6                | 4.84  | 0.032 |
| CPSF4L   | 3.69 | 0.049 | LOC100507389        | 4.86  | 0.010 |
| TJP3     | 3.70 | 0.048 | HAMP                | 4.87  | 0.004 |
| MYBL1    | 3.72 | 0.017 | LOC101929633        | 4.87  | 0.032 |
| CDKN2C   | 3.75 | 0.029 | DDC                 | 4.95  | 0.020 |
| PDE3A    | 3.82 | 0.013 | KANK4               | 4.95  | 0.047 |
| TICRR    | 3.83 | 0.017 | UGT2B4              | 5.00  | 0.022 |
| GPHA2    | 3.83 | 0.046 | MTTP                | 5.12  | 0.014 |
| ITGAL    | 3.86 | 0.005 | AFM                 | 5.27  | 0.026 |
| UPK3A    | 3.86 | 0.037 | FGG                 | 5.44  | 0.047 |
| RNASE2   | 3.86 | 0.003 | LEAP2               | 5.44  | 0.027 |
| CCNA2    | 3.86 | 0.015 | KLB                 | 5.46  | 0.046 |
| SLC30A10 | 3.89 | 0.013 | FGB                 | 5.48  | 0.041 |
| ADORA2A  | 3.90 | 0.044 | KNG1                | 5.62  | 0.014 |
| KIF15    | 3.93 | 0.048 | CASP1               | 5.69  | 0.035 |
| FGL1     | 3.93 | 0.037 | C8B                 | 5.82  | 0.018 |
| PROCA1   | 3.94 | 0.039 | FGA                 | 5.94  | 0.048 |
| PLG      | 3.95 | 0.004 | SCN1A               | 5.99  | 0.039 |
| LPPR1    | 4.00 | 0.033 | NR1H4               | 6.02  | 0.017 |
| HPX      | 4.00 | 0.015 | ITIH1               | 6.02  | 0.006 |
| SLC38A11 | 4.00 | 0.048 | HPR                 | 6.11  | 0.032 |
| SKA3     | 4.01 | 0.022 | EPO                 | 6.31  | 0.011 |
| HMGB2    | 4.02 | 0.034 | SULT1E1             | 7.06  | 0.016 |
| ALB      | 4.02 | 0.017 | ENPP2               | 7.17  | 0.043 |
| HMMR-AS1 | 4.04 | 0.007 | HP                  | 7.27  | 0.022 |
| FZD4     | 4.04 | 0.045 | NEDD8-MDP1          | 7.81  | 0.027 |
| ZNF80    | 4.08 | 0.010 | MIR3652             | 8.00  | 0.016 |
| SKP2     | 4.08 | 0.020 | SLC6A14             | 8.29  | 0.030 |
| C5       | 4.09 | 0.022 | DYX1C1-CCPG1        | 9.54  | 0.022 |
| NEIL3    | 4.10 | 0.020 | IPO11-LRRC70,LRRC70 | 10.66 | 0.050 |

|                 |         |       |               |     |       |
|-----------------|---------|-------|---------------|-----|-------|
| ATP5J2-PTCD1    | 10.90   | 0.031 | BPIFB6        | inf | 0.006 |
| CNTNAP3P2       | 12.66   | 0.003 | BPIFC         | inf | 0.014 |
| RNASEK-C17orf49 | 13.27   | 0.021 | BRWD1-AS1     | inf | 0.011 |
| ZFP91-CNTF      | 13.45   | 0.028 | BST1          | inf | 0.011 |
| TMX2-CTNND1     | 13.79   | 0.007 | C10orf131     | inf | 0.033 |
| FAM47E-STBD1    | 14.36   | 0.016 | C11orf16      | inf | 0.043 |
| ARL2-SNX15      | 14.78   | 0.020 | C11orf97      | inf | 0.018 |
| HIST1H2AD       | 14.83   | 0.015 | C12orf77      | inf | 0.026 |
| MIR1307         | 15.03   | 0.039 | C17orf64      | inf | 0.028 |
| CCL14           | 15.72   | 0.024 | C18orf42      | inf | 0.033 |
| MIR621          | 16.56   | 0.011 | C19orf67      | inf | 0.021 |
| FAM24B-CUZD1    | 17.75   | 0.043 | C1orf195      | inf | 0.033 |
| APOC4-APOC2     | 18.05   | 0.049 | C1orf204      | inf | 0.043 |
| PIR-FIGF        | 20.82   | 0.040 | C1orf95       | inf | 0.017 |
| SNORA43         | 26.84   | 0.035 | C1QL1         | inf | 0.023 |
| SNORA17         | 76.40   | 0.024 | C20orf144     | inf | 0.023 |
| STON1-GTF2A1L   | 80.08   | 0.016 | C20orf166-AS1 | inf | 0.048 |
| TMEM189-UBE2V1  | 80.33   | 0.014 | C22orf15      | inf | 0.025 |
| MSTO2P          | 80.89   | 0.032 | C2orf50       | inf | 0.030 |
| PCDHA10         | 118.96  | 0.015 | C3orf14       | inf | 0.029 |
| UBE2F-SCLY      | 169.95  | 0.033 | C3orf55       | inf | 0.032 |
| FXYD6-FXYD2     | 185.46  | 0.019 | C3orf80       | inf | 0.044 |
| ZASP            | 215.20  | 0.041 | C6orf229      | inf | 0.030 |
| BGLAP           | 227.37  | 0.009 | C6orf52       | inf | 0.008 |
| PCDHA4          | 323.22  | 0.044 | CA1           | inf | 0.007 |
| CORT            | 376.63  | 0.013 | CACNA1C       | inf | 0.046 |
| PCDHGC5         | 1037.76 | 0.032 | CACNA1C-AS2   | inf | 0.010 |
| AANAT           | inf     | 0.016 | CALCB         | inf | 0.037 |
| AATK-AS1        | inf     | 0.021 | CALR3         | inf | 0.046 |
| ABCB5           | inf     | 0.046 | CAPN9         | inf | 0.013 |
| ABCC5-AS1       | inf     | 0.008 | CARD16        | inf | 0.047 |
| ABRA            | inf     | 0.036 | CASP14        | inf | 0.031 |
| ACCS            | inf     | 0.019 | CATIP-AS1     | inf | 0.029 |
| ACPT            | inf     | 0.037 | CATSPER4      | inf | 0.004 |
| ACSM2A          | inf     | 0.042 | CATSPERD      | inf | 0.017 |
| ACTL7A          | inf     | 0.025 | CBY3          | inf | 0.032 |
| ACTL7B          | inf     | 0.020 | CCDC158       | inf | 0.005 |
| ADH1B           | inf     | 0.038 | CCDC3         | inf | 0.024 |
| ADIPOQ          | inf     | 0.006 | CCDC8         | inf | 0.047 |
| ADIPOQ-AS1      | inf     | 0.034 | CCL17         | inf | 0.028 |
| ADORA2A-AS1     | inf     | 0.019 | CCL28         | inf | 0.043 |
| ADORA3          | inf     | 0.046 | CCT8L2        | inf | 0.045 |
| ADRB1           | inf     | 0.012 | CD209         | inf | 0.003 |
| AGBL4           | inf     | 0.038 | CD3G          | inf | 0.008 |
| AGRP            | inf     | 0.027 | CD8B          | inf | 0.027 |
| AGXT2           | inf     | 0.018 | CDC14C        | inf | 0.010 |
| AIRN            | inf     | 0.048 | CDC42P3       | inf | 0.015 |
| AJAP1           | inf     | 0.041 | CDH9          | inf | 0.035 |
| AKAP14          | inf     | 0.015 | CDKL2         | inf | 0.048 |
| ALOX15          | inf     | 0.023 | CEACAM20      | inf | 0.009 |
| ANAPC1P1        | inf     | 0.026 | CECR1         | inf | 0.040 |
| ANKRD18DP       | inf     | 0.050 | CECR2         | inf | 0.008 |
| ANKRD22         | inf     | 0.012 | CEND1         | inf | 0.006 |
| ANKRD34B        | inf     | 0.028 | CFHR1         | inf | 0.033 |
| ANKRD36BP2      | inf     | 0.048 | CFP           | inf | 0.026 |
| ANP32AP1        | inf     | 0.019 | CHRD12        | inf | 0.019 |
| ANXA13          | inf     | 0.006 | CHRM1         | inf | 0.046 |
| ARHGAP25        | inf     | 0.044 | CLEC2B        | inf | 0.046 |
| ARHGEF38        | inf     | 0.020 | CLEC7A        | inf | 0.050 |
| ARID3C          | inf     | 0.042 | CNGA3         | inf | 0.046 |
| ARR3            | inf     | 0.045 | CNTN2         | inf | 0.045 |
| ASB15           | inf     | 0.039 | COL6A4P2      | inf | 0.010 |
| ASPN            | inf     | 0.028 | COPZ2         | inf | 0.038 |
| ATP11AUN        | inf     | 0.044 | COX7A1        | inf | 0.021 |
| ATP4A           | inf     | 0.020 | CPLX3         | inf | 0.007 |
| BAGE,BAGE5      | inf     | 0.008 | CPO           | inf | 0.017 |
| BAGE4           | inf     | 0.008 | CPXM1         | inf | 0.045 |
| BAGE5           | inf     | 0.007 | CRSP8P        | inf | 0.012 |
| BCHE            | inf     | 0.025 | CSNK1A1P1     | inf | 0.022 |
| BCL2L14         | inf     | 0.012 | CST7          | inf | 0.019 |
| BCORP1          | inf     | 0.031 | CTB-12O2.1    | inf | 0.006 |
| BECN1P1         | inf     | 0.029 | CTC-436P18.1  | inf | 0.043 |

|               |     |       |             |     |       |
|---------------|-----|-------|-------------|-----|-------|
| CTD-2270F17.1 | inf | 0.025 | GLYATL3     | inf | 0.014 |
| CTD-3080P12.3 | inf | 0.050 | GMCL1P1     | inf | 0.007 |
| CTLA4         | inf | 0.021 | GNG13       | inf | 0.015 |
| CTNND2        | inf | 0.049 | GP2         | inf | 0.004 |
| CXCL11        | inf | 0.039 | GPAT2       | inf | 0.012 |
| CXCL17        | inf | 0.028 | GPR111      | inf | 0.047 |
| CYCSP52       | inf | 0.006 | GPR182      | inf | 0.016 |
| CYLC2         | inf | 0.037 | GRIA3       | inf | 0.026 |
| CYP2C18       | inf | 0.028 | GSTM1       | inf | 0.043 |
| CYP4B1        | inf | 0.025 | GSTM2P1     | inf | 0.023 |
| CYP4F24P      | inf | 0.021 | GSX2        | inf | 0.013 |
| CYP4F30P      | inf | 0.030 | GUSBP3      | inf | 0.021 |
| CYP4X1        | inf | 0.047 | H19         | inf | 0.011 |
| DCAF4L2       | inf | 0.013 | HAO1        | inf | 0.026 |
| DCAF8L2       | inf | 0.046 | HCCAT3      | inf | 0.013 |
| DCDC1         | inf | 0.045 | HERC2P10    | inf | 0.014 |
| DCHS2         | inf | 0.010 | HEYL        | inf | 0.043 |
| DCST1         | inf | 0.028 | HFE2        | inf | 0.018 |
| DCST2         | inf | 0.038 | HHIP-AS1    | inf | 0.032 |
| DDX25         | inf | 0.009 | HIST1H2AJ   | inf | 0.033 |
| DLEC1         | inf | 0.019 | HIST1H2BB   | inf | 0.038 |
| DPP10-AS1     | inf | 0.043 | HIST1H3A    | inf | 0.012 |
| DPY19L2P3     | inf | 0.023 | HIST1H4D    | inf | 0.041 |
| DPYD-AS1      | inf | 0.037 | HIST2H2AB   | inf | 0.013 |
| DPYS          | inf | 0.009 | HIST2H3D    | inf | 0.009 |
| EBF3          | inf | 0.022 | HLA-C       | inf | 0.013 |
| EDAR          | inf | 0.028 | HLX-AS1     | inf | 0.037 |
| EHHADH-AS1    | inf | 0.024 | HMGC52      | inf | 0.038 |
| ENO1-AS1      | inf | 0.023 | HNF4A-AS1   | inf | 0.045 |
| EPPIN         | inf | 0.024 | HOXD13      | inf | 0.009 |
| ERAS          | inf | 0.029 | HOXD3       | inf | 0.007 |
| ERICH6        | inf | 0.017 | HOXD4       | inf | 0.032 |
| ESRP1         | inf | 0.047 | HRH3        | inf | 0.035 |
| ETV2          | inf | 0.043 | HTR6        | inf | 0.005 |
| FAM107A       | inf | 0.021 | HYAL4       | inf | 0.017 |
| FAM170A       | inf | 0.013 | IFLTD1      | inf | 0.047 |
| FAM182A       | inf | 0.006 | IFT27       | inf | 0.033 |
| FAM189A1      | inf | 0.019 | IGSF10      | inf | 0.007 |
| FAM209B       | inf | 0.035 | IGSF5       | inf | 0.046 |
| FAM221B       | inf | 0.029 | IL18R1      | inf | 0.040 |
| FAM229A       | inf | 0.009 | IMPG1       | inf | 0.030 |
| FAM66A        | inf | 0.022 | INPP4B      | inf | 0.012 |
| FAM95A        | inf | 0.006 | IZUMO1      | inf | 0.008 |
| FANCD2OS      | inf | 0.024 | JARID2-AS1  | inf | 0.018 |
| FCRLA         | inf | 0.020 | KBTBD11     | inf | 0.005 |
| FDCSP         | inf | 0.024 | KCNB1       | inf | 0.045 |
| FEZF1         | inf | 0.027 | KEL         | inf | 0.030 |
| FGF14-AS2     | inf | 0.029 | KIAA2022    | inf | 0.030 |
| FGF21         | inf | 0.012 | KLF1        | inf | 0.010 |
| FGFBP2        | inf | 0.030 | KLF2        | inf | 0.008 |
| FLJ21408      | inf | 0.029 | KLK14       | inf | 0.023 |
| FLJ27354      | inf | 0.027 | KRT6C       | inf | 0.043 |
| FLJ43879      | inf | 0.029 | KRT73       | inf | 0.047 |
| FMOD          | inf | 0.011 | KRTAP5-9    | inf | 0.045 |
| FOXD4L6       | inf | 0.013 | KY          | inf | 0.024 |
| FOXN3-AS2     | inf | 0.021 | LACTBL1     | inf | 0.037 |
| FOXO6         | inf | 0.031 | LAMTOR5-AS1 | inf | 0.028 |
| FRMD7         | inf | 0.043 | LARS2-AS1   | inf | 0.034 |
| FUT5          | inf | 0.009 | LEFTY2      | inf | 0.014 |
| FUT7          | inf | 0.015 | LINC00159   | inf | 0.039 |
| FXYP1         | inf | 0.025 | LINC00202-2 | inf | 0.048 |
| GATA1         | inf | 0.050 | LINC00269   | inf | 0.036 |
| GDAP1L1       | inf | 0.044 | LINC00515   | inf | 0.014 |
| GDF10         | inf | 0.010 | LINC00578   | inf | 0.015 |
| GFAP          | inf | 0.035 | LINC00606   | inf | 0.033 |
| GFRA1         | inf | 0.008 | LINC00616   | inf | 0.009 |
| GFRA3         | inf | 0.040 | LINC00670   | inf | 0.027 |
| GGTLC1        | inf | 0.006 | LINC00700   | inf | 0.032 |
| GH2           | inf | 0.039 | LINC00845   | inf | 0.033 |
| GJB6          | inf | 0.021 | LINC00935   | inf | 0.037 |
| GJB7          | inf | 0.039 | LINC00939   | inf | 0.037 |
| GLRA1         | inf | 0.041 | LINC00987   | inf | 0.040 |

|              |     |       |            |     |       |
|--------------|-----|-------|------------|-----|-------|
| LINC01049    | inf | 0.026 | LOC400891  | inf | 0.008 |
| LINC01085    | inf | 0.028 | LOC401010  | inf | 0.014 |
| LINC01099    | inf | 0.028 | LOC402160  | inf | 0.044 |
| LINC01140    | inf | 0.049 | LOC440896  | inf | 0.047 |
| LINC01141    | inf | 0.009 | LOC574538  | inf | 0.045 |
| LINC01207    | inf | 0.017 | LOC63930   | inf | 0.032 |
| LINC01237    | inf | 0.004 | LOC642943  | inf | 0.018 |
| LINC01258    | inf | 0.039 | LOC643355  | inf | 0.016 |
| LINC01276    | inf | 0.039 | LOC643441  | inf | 0.030 |
| LINC01310    | inf | 0.025 | LOC643711  | inf | 0.024 |
| LINC01342    | inf | 0.021 | LOC645434  | inf | 0.049 |
| LINC01356    | inf | 0.013 | LOC645638  | inf | 0.027 |
| LINC-ROR     | inf | 0.017 | LOC647859  | inf | 0.030 |
| LINGO1       | inf | 0.038 | LOC653712  | inf | 0.037 |
| LIPI         | inf | 0.015 | LOC729739  | inf | 0.027 |
| LMO1         | inf | 0.042 | LPA        | inf | 0.045 |
| LMO3         | inf | 0.008 | LPPR4      | inf | 0.050 |
| LOC100128006 | inf | 0.003 | LRRC32     | inf | 0.007 |
| LOC100128885 | inf | 0.021 | LRRD1      | inf | 0.044 |
| LOC100129427 | inf | 0.019 | LYZL4      | inf | 0.023 |
| LOC100129935 | inf | 0.031 | LYZL6      | inf | 0.045 |
| LOC100131655 | inf | 0.044 | MAEL       | inf | 0.021 |
| LOC100133286 | inf | 0.014 | MAGOH2     | inf | 0.034 |
| LOC100287072 | inf | 0.003 | MAP1LC3A   | inf | 0.013 |
| LOC100288181 | inf | 0.044 | MB         | inf | 0.009 |
| LOC100288814 | inf | 0.048 | MCHR2      | inf | 0.006 |
| LOC100289092 | inf | 0.004 | MFAP4      | inf | 0.009 |
| LOC100289473 | inf | 0.017 | MFSD2B     | inf | 0.014 |
| LOC100422737 | inf | 0.023 | MGC32805   | inf | 0.014 |
| LOC100505592 | inf | 0.027 | MGC34796   | inf | 0.019 |
| LOC100506476 | inf | 0.027 | MIR1257    | inf | 0.035 |
| LOC100507387 | inf | 0.040 | MIR135A1   | inf | 0.033 |
| LOC100507547 | inf | 0.013 | MIR143HG   | inf | 0.012 |
| LOC101060524 | inf | 0.023 | MIR181A2HG | inf | 0.014 |
| LOC101243545 | inf | 0.034 | MIR25      | inf | 0.003 |
| LOC101926897 | inf | 0.026 | MIR26A2    | inf | 0.037 |
| LOC101926944 | inf | 0.009 | MIR34A     | inf | 0.027 |
| LOC101927123 | inf | 0.047 | MIR3661    | inf | 0.043 |
| LOC101927190 | inf | 0.029 | MIR378J    | inf | 0.039 |
| LOC101927196 | inf | 0.027 | MIR4737    | inf | 0.032 |
| LOC101927272 | inf | 0.035 | MIR4800    | inf | 0.021 |
| LOC101927334 | inf | 0.032 | MIR5194    | inf | 0.026 |
| LOC101927437 | inf | 0.018 | MIR570     | inf | 0.028 |
| LOC101927571 | inf | 0.021 | MIR589     | inf | 0.021 |
| LOC101927580 | inf | 0.028 | MIR647     | inf | 0.032 |
| LOC101927583 | inf | 0.020 | MIR941-1   | inf | 0.015 |
| LOC101927678 | inf | 0.046 | MME        | inf | 0.020 |
| LOC101927700 | inf | 0.032 | MMP21      | inf | 0.046 |
| LOC101927839 | inf | 0.010 | MRAP       | inf | 0.031 |
| LOC101927948 | inf | 0.042 | MRAP2      | inf | 0.016 |
| LOC101928008 | inf | 0.013 | MROH7      | inf | 0.044 |
| LOC101928107 | inf | 0.029 | MRVI1-AS1  | inf | 0.022 |
| LOC101928163 | inf | 0.047 | MS4A2      | inf | 0.016 |
| LOC101928269 | inf | 0.043 | MYADML2    | inf | 0.021 |
| LOC101928437 | inf | 0.013 | MYO15A     | inf | 0.024 |
| LOC101928689 | inf | 0.008 | MYO1G      | inf | 0.006 |
| LOC101928708 | inf | 0.006 | NAT8B      | inf | 0.011 |
| LOC101928844 | inf | 0.007 | NCRUPAR    | inf | 0.036 |
| LOC101929059 | inf | 0.047 | NDP        | inf | 0.014 |
| LOC101929099 | inf | 0.034 | NDUFAF4P1  | inf | 0.020 |
| LOC101929452 | inf | 0.047 | NELL2      | inf | 0.042 |
| LOC101929613 | inf | 0.028 | NEURL1     | inf | 0.015 |
| LOC101929680 | inf | 0.047 | NKG7       | inf | 0.031 |
| LOC102031319 | inf | 0.024 | NPSR1      | inf | 0.021 |
| LOC103191607 | inf | 0.004 | NRN1L      | inf | 0.025 |
| LOC145845    | inf | 0.004 | NXF4       | inf | 0.010 |
| LOC150935    | inf | 0.013 | NXPH1      | inf | 0.041 |
| LOC200772    | inf | 0.010 | OCA2       | inf | 0.033 |
| LOC283693    | inf | 0.037 | OLIG3      | inf | 0.033 |
| LOC284009    | inf | 0.009 | OPRD1      | inf | 0.045 |
| LOC339166    | inf | 0.007 | OR11H4     | inf | 0.029 |
| LOC339874    | inf | 0.040 | OR2A4      | inf | 0.045 |



|             |     |       |                  |     |       |
|-------------|-----|-------|------------------|-----|-------|
| OR2F1       | inf | 0.017 | SFRP5            | inf | 0.017 |
| OR5B12      | inf | 0.025 | SH3GL2           | inf | 0.021 |
| OR6B1       | inf | 0.039 | SHD              | inf | 0.017 |
| OR6B2       | inf | 0.026 | SIAH3            | inf | 0.050 |
| OTC         | inf | 0.023 | SIGLEC8          | inf | 0.012 |
| OXCT1-AS1   | inf | 0.030 | SKP1P2           | inf | 0.030 |
| P2RX2       | inf | 0.030 | SLC13A2          | inf | 0.022 |
| P2RY12      | inf | 0.004 | SLC17A1          | inf | 0.003 |
| PABPC3      | inf | 0.029 | SLC17A4          | inf | 0.046 |
| PBX2        | inf | 0.048 | SLC1A1           | inf | 0.016 |
| PCAT2       | inf | 0.014 | SLC22A25         | inf | 0.023 |
| PCOLCE-AS1  | inf | 0.019 | SLC25A48         | inf | 0.043 |
| PCSK1       | inf | 0.025 | SLC26A8          | inf | 0.013 |
| PDILT       | inf | 0.010 | SLC28A1          | inf | 0.006 |
| PEX7        | inf | 0.015 | SLC2A7           | inf | 0.025 |
| PGLYRP1     | inf | 0.038 | SLC39A2          | inf | 0.034 |
| PHACTR1     | inf | 0.041 | SLC46A3          | inf | 0.009 |
| PID1        | inf | 0.047 | SLC4A9           | inf | 0.029 |
| PIK3R6      | inf | 0.011 | SLC5A4           | inf | 0.023 |
| PKHD1L1     | inf | 0.028 | SLCO1A2          | inf | 0.049 |
| PLA2G1B     | inf | 0.010 | SLCO2A1          | inf | 0.016 |
| PLA2G7      | inf | 0.024 | SMCR5            | inf | 0.037 |
| PLAC4       | inf | 0.039 | SNAP91           | inf | 0.048 |
| PLEKHG7     | inf | 0.014 | SNORA1           | inf | 0.016 |
| PLIN1       | inf | 0.032 | SNORA10          | inf | 0.037 |
| PNMA3       | inf | 0.022 | SNORA11          | inf | 0.043 |
| PNMA6A      | inf | 0.032 | SNORA20          | inf | 0.035 |
| POU5F1P4    | inf | 0.026 | SNORA22          | inf | 0.023 |
| PPFIA4      | inf | 0.017 | SNORA29          | inf | 0.029 |
| PPIAP30     | inf | 0.031 | SNORA2A          | inf | 0.003 |
| PRAM1       | inf | 0.027 | SNORA31          | inf | 0.031 |
| PRKACG      | inf | 0.012 | SNORA33          | inf | 0.030 |
| PRM1        | inf | 0.041 | SNORA41          | inf | 0.012 |
| PRM2        | inf | 0.027 | SNORA47          | inf | 0.040 |
| PRRC2A      | inf | 0.005 | SNORA51          | inf | 0.036 |
| PRSS12      | inf | 0.020 | SNORA52          | inf | 0.034 |
| PTENP1      | inf | 0.025 | SNORA61          | inf | 0.036 |
| PZP         | inf | 0.049 | SNORA71B         | inf | 0.032 |
| RAB25       | inf | 0.030 | SNORA71C         | inf | 0.019 |
| RAB40AL     | inf | 0.008 | SNORA74A         | inf | 0.014 |
| RAPGEF4-AS1 | inf | 0.045 | SNORA76C         | inf | 0.028 |
| RARRES3     | inf | 0.030 | SNORD102         | inf | 0.033 |
| RASAL3      | inf | 0.023 | SNORD116-21      | inf | 0.013 |
| RASL10A     | inf | 0.050 | SNORD21          | inf | 0.016 |
| RASL12      | inf | 0.035 | SNORD22          | inf | 0.012 |
| RFPL1S      | inf | 0.007 | SNORD32A         | inf | 0.026 |
| RFPL3S      | inf | 0.036 | SNORD35A         | inf | 0.027 |
| RGPD1       | inf | 0.041 | SNORD35B         | inf | 0.012 |
| RGPD2       | inf | 0.022 | SNORD36A         | inf | 0.004 |
| RGR         | inf | 0.043 | SNORD58C         | inf | 0.030 |
| RGS21       | inf | 0.022 | SNORD60          | inf | 0.010 |
| RHOH        | inf | 0.043 | SNORD86          | inf | 0.038 |
| RIC3        | inf | 0.046 | SNORD9           | inf | 0.019 |
| RMDN2-AS1   | inf | 0.003 | SOX10            | inf | 0.008 |
| RNF113B     | inf | 0.026 | SPACA4           | inf | 0.014 |
| RNF148      | inf | 0.023 | SPAG6            | inf | 0.042 |
| RNF186      | inf | 0.040 | SPATC1           | inf | 0.043 |
| RPL13AP6    | inf | 0.018 | SPDYE8P          | inf | 0.042 |
| RPL19P12    | inf | 0.003 | SPG20OS          | inf | 0.022 |
| RPL21P44    | inf | 0.029 | SPINK6           | inf | 0.003 |
| RPL31P11    | inf | 0.027 | SRD5A3-AS1       | inf | 0.030 |
| RRH         | inf | 0.027 | ST8SIA3          | inf | 0.038 |
| RS1         | inf | 0.024 | STEAP2-AS1       | inf | 0.010 |
| RTP4        | inf | 0.029 | STK31            | inf | 0.033 |
| RUNX1-IT1   | inf | 0.003 | STRC             | inf | 0.027 |
| SASH3       | inf | 0.016 | STX19            | inf | 0.030 |
| SCARNA10    | inf | 0.011 | SVOPL            | inf | 0.027 |
| SCARNA9L    | inf | 0.004 | TAS2R46          | inf | 0.043 |
| SCNN1G      | inf | 0.017 | TBC1D3P1-DHX40P1 | inf | 0.006 |
| SEC1P       | inf | 0.015 | TCP10L2          | inf | 0.036 |
| SELE        | inf | 0.025 | TDGF1P3          | inf | 0.040 |
| SETSIP      | inf | 0.022 | TDH              | inf | 0.043 |

|            |      |       |                |      |       |
|------------|------|-------|----------------|------|-------|
| TEDDM1     | inf  | 0.042 | ADAMTS15       | -inf | 0.044 |
| TEX101     | inf  | 0.009 | ADAMTS18       | -inf | 0.034 |
| TEX22      | inf  | 0.024 | ADAMTSL1       | -inf | 0.046 |
| TEX41      | inf  | 0.035 | ADH7           | -inf | 0.048 |
| TFEC       | inf  | 0.031 | ADIG           | -inf | 0.049 |
| TIMD4      | inf  | 0.041 | ADRA2A         | -inf | 0.045 |
| TLR7       | inf  | 0.028 | ADRB2          | -inf | 0.042 |
| TLX1       | inf  | 0.015 | ADTRP          | -inf | 0.047 |
| TMEM125    | inf  | 0.024 | AFAP1-AS1      | -inf | 0.034 |
| TMEM155    | inf  | 0.020 | AFAP1L2        | -inf | 0.016 |
| TMEM163    | inf  | 0.021 | AFF2           | -inf | 0.011 |
| TMEM240    | inf  | 0.007 | AFF3           | -inf | 0.004 |
| TPBGL      | inf  | 0.020 | AGPAT4-IT1     | -inf | 0.041 |
| TPPP2      | inf  | 0.027 | AGTR2          | -inf | 0.027 |
| TPTE       | inf  | 0.044 | AHSP           | -inf | 0.026 |
| TRAF3IP3   | inf  | 0.024 | AKNAD1         | -inf | 0.043 |
| TRIM69     | inf  | 0.030 | AKR1C6P        | -inf | 0.039 |
| TRPM5      | inf  | 0.040 | AKR1CL1        | -inf | 0.034 |
| TSSK2      | inf  | 0.036 | ALAS2          | -inf | 0.042 |
| TTC21B-AS1 | inf  | 0.006 | ALOX5          | -inf | 0.006 |
| TTLL13     | inf  | 0.033 | ALPI           | -inf | 0.042 |
| UNC45B     | inf  | 0.047 | ALPP           | -inf | 0.037 |
| UPK1A-AS1  | inf  | 0.026 | ALX4           | -inf | 0.036 |
| UPP2       | inf  | 0.018 | AMER3          | -inf | 0.009 |
| VCAM1      | inf  | 0.031 | AMH            | -inf | 0.001 |
| VEGFC      | inf  | 0.023 | AMPD1          | -inf | 0.039 |
| VMO1       | inf  | 0.039 | ANGPT1         | -inf | 0.036 |
| VN1R5      | inf  | 0.006 | ANGPT4         | -inf | 0.018 |
| VNN3       | inf  | 0.025 | ANGPTL5        | -inf | 0.003 |
| VSTM2B     | inf  | 0.007 | ANKFN1         | -inf | 0.043 |
| VSTM2L     | inf  | 0.035 | ANKK1          | -inf | 0.046 |
| WDR38      | inf  | 0.021 | ANKRD20A4      | -inf | 0.033 |
| WNT8A      | inf  | 0.041 | ANKRD26P1      | -inf | 0.027 |
| WTH3DI     | inf  | 0.004 | ANKRD26P3      | -inf | 0.044 |
| XCL2       | inf  | 0.020 | ANKRD33        | -inf | 0.023 |
| YBX3P1     | inf  | 0.048 | ANKRD35        | -inf | 0.043 |
| YWHAEP1    | inf  | 0.029 | ANKRD45        | -inf | 0.011 |
| ZAR1L      | inf  | 0.014 | ANKUB1         | -inf | 0.040 |
| ZBTB20-AS1 | inf  | 0.007 | ANO1           | -inf | 0.045 |
| ZFHx4-AS1  | inf  | 0.050 | ANO2           | -inf | 0.025 |
| ZFP3       | inf  | 0.025 | ANTXRPL1       | -inf | 0.011 |
| ZMAT1      | inf  | 0.027 | ANXA1          | -inf | 0.014 |
| ZNF470     | inf  | 0.021 | ANXA10         | -inf | 0.016 |
| ZNF518B    | inf  | 0.015 | ANXA2P2        | -inf | 0.008 |
| ZNF835     | inf  | 0.031 | ANXA2P3        | -inf | 0.027 |
| ZNF99      | inf  | 0.015 | ANXA8L1        | -inf | 0.027 |
| A2ML1      | -inf | 0.040 | AP1B1P1        | -inf | 0.013 |
| AADACL4    | -inf | 0.011 | AP3B2          | -inf | 0.017 |
| ABCA13     | -inf | 0.031 | APBB1IP        | -inf | 0.016 |
| ABCB11     | -inf | 0.041 | APLN           | -inf | 0.017 |
| ABCC12     | -inf | 0.005 | APOD           | -inf | 0.047 |
| ABCC8      | -inf | 0.012 | AQP1           | -inf | 0.014 |
| ABCG1      | -inf | 0.047 | AQPEP          | -inf | 0.025 |
| ABCG4      | -inf | 0.031 | AR             | -inf | 0.011 |
| ACAN       | -inf | 0.044 | ARHGAP15       | -inf | 0.042 |
| ACMSD      | -inf | 0.044 | ARHGAP19-SLIT1 | -inf | 0.032 |
| ACOXL      | -inf | 0.027 | ARHGAP20       | -inf | 0.031 |
| ACR        | -inf | 0.023 | ARHGAP27       | -inf | 0.034 |
| ACSBG2     | -inf | 0.019 | ARHGAP36       | -inf | 0.016 |
| ACSM4      | -inf | 0.028 | ARHGAP9        | -inf | 0.049 |
| ACTBL2     | -inf | 0.036 | ARL13A         | -inf | 0.039 |
| ACTC1      | -inf | 0.031 | ARL14EPL       | -inf | 0.011 |
| ACTG1P4    | -inf | 0.005 | ARMCX1         | -inf | 0.006 |
| ACTG2      | -inf | 0.029 | ARNTL2-AS1     | -inf | 0.048 |
| ACTN1-AS1  | -inf | 0.013 | ARX            | -inf | 0.033 |
| ACVRL1     | -inf | 0.025 | ASAP1-IT2      | -inf | 0.010 |
| ADAM12     | -inf | 0.007 | ASCL1          | -inf | 0.032 |
| ADAM28     | -inf | 0.049 | ASCL5          | -inf | 0.022 |
| ADAM29     | -inf | 0.012 | ASIC3          | -inf | 0.030 |
| ADAMDEC1   | -inf | 0.039 | ASXL3          | -inf | 0.005 |
| ADAMTS1    | -inf | 0.016 | ATL3           | -inf | 0.004 |
| ADAMTS12   | -inf | 0.041 |                | -inf | 0.034 |

|             |      |       |                |      |       |
|-------------|------|-------|----------------|------|-------|
| ATOH7       | -inf | 0.008 | C1orf189       | -inf | 0.006 |
| ATP10B      | -inf | 0.048 | C1orf21        | -inf | 0.022 |
| ATP13A4     | -inf | 0.047 | C1orf228       | -inf | 0.034 |
| ATP13A5     | -inf | 0.028 | C1orf94        | -inf | 0.019 |
| ATP1A2      | -inf | 0.026 | C1QL4          | -inf | 0.037 |
| ATP2B3      | -inf | 0.042 | C1QTNF5        | -inf | 0.045 |
| ATP2C2      | -inf | 0.040 | C20orf173      | -inf | 0.013 |
| ATP4B       | -inf | 0.023 | C20orf195      | -inf | 0.027 |
| ATRNL1      | -inf | 0.048 | C20orf197      | -inf | 0.045 |
| AVPR1A      | -inf | 0.014 | C20orf202      | -inf | 0.037 |
| AWAT1       | -inf | 0.031 | C21orf88       | -inf | 0.037 |
| B3GALT1     | -inf | 0.024 | C22orf34       | -inf | 0.041 |
| B3GALT5     | -inf | 0.021 | C2CD4D         | -inf | 0.043 |
| B3GNT5      | -inf | 0.017 | C2orf71        | -inf | 0.006 |
| B3GNT6      | -inf | 0.027 | C2orf73        | -inf | 0.011 |
| BACH1-IT2   | -inf | 0.019 | C2orf78        | -inf | 0.029 |
| BACH2       | -inf | 0.017 | C2orf83        | -inf | 0.009 |
| BAI2        | -inf | 0.020 | C3AR1          | -inf | 0.010 |
| BARHL1      | -inf | 0.022 | C3orf20        | -inf | 0.040 |
| BBOX1       | -inf | 0.006 | C3orf43        | -inf | 0.029 |
| BCL11A      | -inf | 0.006 | C3orf56        | -inf | 0.013 |
| BDKRB2      | -inf | 0.020 | C3orf67        | -inf | 0.008 |
| BDNF        | -inf | 0.015 | C5orf46        | -inf | 0.039 |
| BEND5       | -inf | 0.023 | C5orf47        | -inf | 0.025 |
| BEST3       | -inf | 0.005 | C5orf49        | -inf | 0.039 |
| BEX4        | -inf | 0.025 | C5orf56        | -inf | 0.016 |
| BHLHE40-AS1 | -inf | 0.031 | C5orf58        | -inf | 0.006 |
| BIN2        | -inf | 0.027 | C5orf66-AS1    | -inf | 0.033 |
| BIRC8       | -inf | 0.040 | C6orf141       | -inf | 0.016 |
| BMP2        | -inf | 0.043 | C6orf165       | -inf | 0.030 |
| BMPER       | -inf | 0.015 | C6orf99        | -inf | 0.046 |
| BMPR1B      | -inf | 0.005 | C7orf13        | -inf | 0.049 |
| BOK-AS1     | -inf | 0.020 | C7orf33        | -inf | 0.023 |
| BOLL        | -inf | 0.048 | C8orf12        | -inf | 0.013 |
| BRD2        | -inf | 0.017 | C8orf88        | -inf | 0.019 |
| BSND        | -inf | 0.003 | C9orf24        | -inf | 0.030 |
| BTK         | -inf | 0.018 | C9orf50        | -inf | 0.034 |
| BTN1A1      | -inf | 0.023 | C9orf53        | -inf | 0.011 |
| BVES-AS1    | -inf | 0.007 | CABP1          | -inf | 0.016 |
| BZRAP1      | -inf | 0.024 | CACNA1E        | -inf | 0.017 |
| C10orf105   | -inf | 0.015 | CACNA1F        | -inf | 0.005 |
| C10orf67    | -inf | 0.023 | CACNA1G        | -inf | 0.005 |
| C11orf42    | -inf | 0.017 | CACNA2D3       | -inf | 0.018 |
| C11orf44    | -inf | 0.014 | CADM2          | -inf | 0.043 |
| C11orf63    | -inf | 0.044 | CALCR          | -inf | 0.043 |
| C11orf86    | -inf | 0.042 | CALML3         | -inf | 0.031 |
| C11orf96    | -inf | 0.035 | CAMK1G         | -inf | 0.020 |
| C12orf36    | -inf | 0.010 | CAMK4          | -inf | 0.047 |
| C12orf42    | -inf | 0.011 | CAND0.11       | -inf | 0.039 |
| C12orf79    | -inf | 0.009 | CAPN14         | -inf | 0.028 |
| C12orf80    | -inf | 0.046 | CAPNS2         | -inf | 0.049 |
| C14orf178   | -inf | 0.036 | CASC15         | -inf | 0.011 |
| C14orf182   | -inf | 0.044 | CASC16         | -inf | 0.044 |
| C14orf23    | -inf | 0.035 | CASC8          | -inf | 0.034 |
| C14orf39    | -inf | 0.045 | CBR3           | -inf | 0.018 |
| C15orf59    | -inf | 0.043 | CCDC110        | -inf | 0.047 |
| C16orf54    | -inf | 0.003 | CCDC129        | -inf | 0.026 |
| C16orf74    | -inf | 0.007 | CCDC144A       | -inf | 0.042 |
| C16orf96    | -inf | 0.013 | CCDC147-AS1    | -inf | 0.005 |
| C17orf105   | -inf | 0.036 | CCDC153        | -inf | 0.042 |
| C17orf50    | -inf | 0.046 | CCDC169-SOHLH2 | -inf | 0.004 |
| C17orf78    | -inf | 0.003 | CCDC179        | -inf | 0.039 |
| C17orf98    | -inf | 0.039 | CCDC19         | -inf | 0.026 |
| C18orf61    | -inf | 0.044 | CCDC27         | -inf | 0.031 |
| C19orf45    | -inf | 0.019 | CCDC62         | -inf | 0.024 |
| C19orf84    | -inf | 0.035 | CCDC64B        | -inf | 0.025 |
| C1orf100    | -inf | 0.023 | CCDC70         | -inf | 0.035 |
| C1orf110    | -inf | 0.014 | CCDC83         | -inf | 0.022 |
| C1orf141    | -inf | 0.024 | CCK            | -inf | 0.038 |
| C1orf145    | -inf | 0.024 | CCL23          | -inf | 0.011 |
| C1orf146    | -inf | 0.043 | CCL24          | -inf | 0.015 |
| C1orf180    | -inf | 0.027 | CCL26          | -inf | 0.040 |

|            |      |       |               |      |       |
|------------|------|-------|---------------|------|-------|
| CCL3       | -inf | 0.022 | COX7B2        | -inf | 0.040 |
| CCNA1      | -inf | 0.044 | CPA2          | -inf | 0.024 |
| CCR10      | -inf | 0.012 | CPLX4         | -inf | 0.036 |
| CCR4       | -inf | 0.015 | CPNE5         | -inf | 0.017 |
| CCRL2      | -inf | 0.028 | CPNE9         | -inf | 0.007 |
| CD163      | -inf | 0.020 | CPXM2         | -inf | 0.035 |
| CD177      | -inf | 0.017 | CRCT1         | -inf | 0.044 |
| CD300A     | -inf | 0.033 | CRTAM         | -inf | 0.033 |
| CD300C     | -inf | 0.019 | CRYBA4        | -inf | 0.042 |
| CD300LB    | -inf | 0.030 | CSF2RB        | -inf | 0.032 |
| CD53       | -inf | 0.022 | CSNK2A3       | -inf | 0.019 |
| CD5L       | -inf | 0.010 | CSRNP3        | -inf | 0.005 |
| CD69       | -inf | 0.036 | CSRP3         | -inf | 0.029 |
| CD70       | -inf | 0.027 | CST4          | -inf | 0.023 |
| CD79B      | -inf | 0.020 | CST5          | -inf | 0.010 |
| CD84       | -inf | 0.017 | CT55          | -inf | 0.026 |
| CD86       | -inf | 0.041 | CTCFL         | -inf | 0.028 |
| CD93       | -inf | 0.050 | CTD-2201118.1 | -inf | 0.019 |
| CDH10      | -inf | 0.031 | CTD-2297D10.2 | -inf | 0.038 |
| CDH13      | -inf | 0.028 | CTNNA2        | -inf | 0.004 |
| CDH19      | -inf | 0.015 | CTRB1         | -inf | 0.024 |
| CDH8       | -inf | 0.026 | CTRB2         | -inf | 0.001 |
| CDK20      | -inf | 0.029 | CTXN2         | -inf | 0.030 |
| CDRT7      | -inf | 0.037 | CX3CR1        | -inf | 0.034 |
| CDSN       | -inf | 0.042 | CXADRP2       | -inf | 0.045 |
| CDX2       | -inf | 0.009 | CXCL10        | -inf | 0.004 |
| CEACAM6    | -inf | 0.036 | CXCR5         | -inf | 0.010 |
| CEACAM8    | -inf | 0.033 | CXorf36       | -inf | 0.023 |
| CELA3B     | -inf | 0.030 | CXXC4         | -inf | 0.027 |
| CER1       | -inf | 0.045 | CYP17A1       | -inf | 0.039 |
| CESSA      | -inf | 0.038 | CYP26A1       | -inf | 0.032 |
| CFHR5      | -inf | 0.042 | CYP4F62P      | -inf | 0.009 |
| CFTR       | -inf | 0.006 | CYP4Z1        | -inf | 0.009 |
| CGB        | -inf | 0.015 | CYTIP         | -inf | 0.011 |
| CGB7       | -inf | 0.026 | DAZL          | -inf | 0.045 |
| CGB8       | -inf | 0.039 | DCAF12L2      | -inf | 0.003 |
| CHRM4      | -inf | 0.036 | DCHS1         | -inf | 0.022 |
| CHRNA1     | -inf | 0.010 | DCLK1         | -inf | 0.041 |
| CHRNA4     | -inf | 0.039 | DCLK3         | -inf | 0.004 |
| CHRNA9     | -inf | 0.016 | DCT           | -inf | 0.008 |
| CHST1      | -inf | 0.007 | DCX           | -inf | 0.025 |
| CIART      | -inf | 0.004 | DDIT4L        | -inf | 0.033 |
| CIDEA      | -inf | 0.035 | DDX11L1       | -inf | 0.038 |
| CIITA      | -inf | 0.019 | DDX11L10      | -inf | 0.035 |
| CITED1     | -inf | 0.026 | DDX4          | -inf | 0.028 |
| CLC        | -inf | 0.012 | DDX43         | -inf | 0.044 |
| CLCA2      | -inf | 0.037 | DEFA4         | -inf | 0.003 |
| CLCA4      | -inf | 0.043 | DEFA9P        | -inf | 0.027 |
| CLEC19A    | -inf | 0.016 | DENND2A       | -inf | 0.033 |
| CLEC3B     | -inf | 0.013 | DES           | -inf | 0.023 |
| CLIC6      | -inf | 0.021 | DGAT2L6       | -inf | 0.008 |
| CLUU10S    | -inf | 0.011 | DGCR10        | -inf | 0.039 |
| CLSTN2     | -inf | 0.037 | DGKI          | -inf | 0.048 |
| CLSTN2-AS1 | -inf | 0.030 | DHRS9         | -inf | 0.016 |
| CLVS1      | -inf | 0.046 | DIO2          | -inf | 0.010 |
| CLVS2      | -inf | 0.045 | DIO3          | -inf | 0.038 |
| CMA1       | -inf | 0.034 | DIRAS3        | -inf | 0.013 |
| CMTM2      | -inf | 0.022 | DKFZP434A062  | -inf | 0.003 |
| CNKSR2     | -inf | 0.038 | DKK2          | -inf | 0.018 |
| CNR1       | -inf | 0.034 | DLGAP1        | -inf | 0.043 |
| CNRIP1     | -inf | 0.026 | DLGAP1-AS3    | -inf | 0.047 |
| CNTFR      | -inf | 0.045 | DLGAP2        | -inf | 0.031 |
| CNTN5      | -inf | 0.028 | DLL1          | -inf | 0.041 |
| COL11A1    | -inf | 0.026 | DMRTB1        | -inf | 0.033 |
| COL13A1    | -inf | 0.011 | DMRTC2        | -inf | 0.022 |
| COL15A1    | -inf | 0.012 | DNAH2         | -inf | 0.018 |
| COL22A1    | -inf | 0.050 | DNAH8         | -inf | 0.032 |
| COL4A1     | -inf | 0.029 | DNAI2         | -inf | 0.008 |
| COL4A3     | -inf | 0.019 | DNAJB5-AS1    | -inf | 0.025 |
| COL4A4     | -inf | 0.035 | DNER          | -inf | 0.049 |
| COL6A5     | -inf | 0.003 | DNM3OS        | -inf | 0.035 |
| COL9A1     | -inf | 0.045 | DOCK2         | -inf | 0.006 |

|               |      |       |           |      |       |
|---------------|------|-------|-----------|------|-------|
| DOK2          | -inf | 0.046 | FAM90A25P | -inf | 0.021 |
| DPEP2         | -inf | 0.005 | FANK1     | -inf | 0.038 |
| DPT           | -inf | 0.021 | FASLG     | -inf | 0.035 |
| DRAXIN        | -inf | 0.021 | FBXL7     | -inf | 0.013 |
| DRC1          | -inf | 0.025 | FBXO39    | -inf | 0.028 |
| DSG4          | -inf | 0.043 | FBXO40    | -inf | 0.006 |
| DTHD1         | -inf | 0.008 | FCGR2C    | -inf | 0.031 |
| DUSP2         | -inf | 0.035 | FCRL3     | -inf | 0.015 |
| DUSP21        | -inf | 0.020 | FFAR4     | -inf | 0.050 |
| DUX4L         | -inf | 0.029 | FGD2      | -inf | 0.045 |
| DYNAP         | -inf | 0.048 | FGF3      | -inf | 0.000 |
| EBF1          | -inf | 0.014 | FGF7      | -inf | 0.011 |
| ECHDC3        | -inf | 0.025 | FGR       | -inf | 0.025 |
| ECRP          | -inf | 0.024 | FHL1      | -inf | 0.010 |
| EDN2          | -inf | 0.026 | FLG2      | -inf | 0.040 |
| EDNRB         | -inf | 0.042 | FLJ26245  | -inf | 0.024 |
| EEF1DP3       | -inf | 0.016 | FLJ26850  | -inf | 0.028 |
| EFCAB5        | -inf | 0.033 | FLJ33534  | -inf | 0.041 |
| EFCAB6        | -inf | 0.050 | FLJ36000  | -inf | 0.046 |
| EFCAB6-AS1    | -inf | 0.022 | FLJ36777  | -inf | 0.007 |
| EFCC1         | -inf | 0.011 | FLJ38576  | -inf | 0.005 |
| EFEMP1        | -inf | 0.014 | FLJ42351  | -inf | 0.035 |
| EFS           | -inf | 0.039 | FLJ43315  | -inf | 0.044 |
| EGF           | -inf | 0.020 | FLJ44511  | -inf | 0.043 |
| EGFEM1P       | -inf | 0.016 | FLJ46284  | -inf | 0.045 |
| ELTD1         | -inf | 0.031 | FLT1      | -inf | 0.037 |
| EMB           | -inf | 0.033 | FLT4      | -inf | 0.013 |
| EMCN          | -inf | 0.027 | FMN2      | -inf | 0.010 |
| EMR1          | -inf | 0.024 | FMR1NB    | -inf | 0.017 |
| ENAM          | -inf | 0.018 | FNDC7     | -inf | 0.018 |
| ENOX1         | -inf | 0.023 | FNDC9     | -inf | 0.046 |
| ENPP6         | -inf | 0.030 | FOLR1     | -inf | 0.024 |
| EPB41L3       | -inf | 0.043 | FOLR2     | -inf | 0.002 |
| EPHA3         | -inf | 0.038 | FOLR4     | -inf | 0.004 |
| EPHX3         | -inf | 0.011 | FOXD1     | -inf | 0.024 |
| EPX           | -inf | 0.029 | FOXD4L3   | -inf | 0.013 |
| ERBB4         | -inf | 0.030 | FOX E1    | -inf | 0.018 |
| ERG           | -inf | 0.036 | FOXI3     | -inf | 0.032 |
| ERICH3        | -inf | 0.019 | FOXL1     | -inf | 0.044 |
| ERVV-2        | -inf | 0.044 | FOXL2     | -inf | 0.038 |
| ESRRG         | -inf | 0.035 | FOXN1     | -inf | 0.012 |
| ETV3L         | -inf | 0.035 | FOXS1     | -inf | 0.048 |
| EXOC3L2       | -inf | 0.017 | FPR1      | -inf | 0.050 |
| EYA2          | -inf | 0.049 | FRG2B     | -inf | 0.045 |
| EYA4          | -inf | 0.025 | FRMD1     | -inf | 0.019 |
| FABP6         | -inf | 0.022 | FRMPD2P1  | -inf | 0.031 |
| FAHD2CP       | -inf | 0.018 | FRMPD4    | -inf | 0.019 |
| FAIM3         | -inf | 0.006 | FRZB      | -inf | 0.015 |
| FAM109B       | -inf | 0.020 | GOS2      | -inf | 0.026 |
| FAM124A       | -inf | 0.015 | GAB3      | -inf | 0.022 |
| FAM129A       | -inf | 0.030 | GABPB2    | -inf | 0.046 |
| FAM131C       | -inf | 0.030 | GABRA1    | -inf | 0.032 |
| FAM132B       | -inf | 0.025 | GABRA2    | -inf | 0.040 |
| FAM135B       | -inf | 0.034 | GABRA3    | -inf | 0.030 |
| FAM154A       | -inf | 0.027 | GABRB2    | -inf | 0.009 |
| FAM154B       | -inf | 0.034 | GADL1     | -inf | 0.005 |
| FAM159B       | -inf | 0.027 | GAL       | -inf | 0.023 |
| FAM179A       | -inf | 0.028 | GAL3ST3   | -inf | 0.040 |
| FAM183A       | -inf | 0.011 | GALNT15   | -inf | 0.042 |
| FAM183B       | -inf | 0.015 | GALNT5    | -inf | 0.026 |
| FAM189A2      | -inf | 0.042 | GALNT9    | -inf | 0.034 |
| FAM225A       | -inf | 0.045 | GALR3     | -inf | 0.046 |
| FAM228A       | -inf | 0.010 | GAP43     | -inf | 0.021 |
| FAM25A        | -inf | 0.015 | GAS2L1P2  | -inf | 0.033 |
| FAM26E        | -inf | 0.023 | GAS6-AS1  | -inf | 0.029 |
| FAM27A,FAM27C | -inf | 0.038 | GAST      | -inf | 0.003 |
| FAM27C        | -inf | 0.034 | GATA3     | -inf | 0.009 |
| FAM57B        | -inf | 0.027 | GATA6-AS1 | -inf | 0.018 |
| FAM71E2       | -inf | 0.049 | GCM2      | -inf | 0.017 |
| FAM71F1       | -inf | 0.023 | GDF5      | -inf | 0.019 |
| FAM74A4       | -inf | 0.021 | GDNF-AS1  | -inf | 0.024 |
| FAM83E        | -inf | 0.021 | GGNBP1    | -inf | 0.029 |

|                 |      |       |              |      |       |
|-----------------|------|-------|--------------|------|-------|
| GGTLC2          | -inf | 0.030 | HBE1         | -inf | 0.018 |
| GH1             | -inf | 0.046 | HCLS1        | -inf | 0.007 |
| GIF             | -inf | 0.049 | HCN1         | -inf | 0.012 |
| GIPC3           | -inf | 0.020 | HCRTR1       | -inf | 0.031 |
| GJA1            | -inf | 0.022 | HEIH         | -inf | 0.042 |
| GJB4            | -inf | 0.045 | HHATL        | -inf | 0.013 |
| GJB5            | -inf | 0.045 | HHLA2        | -inf | 0.042 |
| GLB1L3          | -inf | 0.038 | HIF1A-AS1    | -inf | 0.006 |
| GLI2            | -inf | 0.009 | HIF3A        | -inf | 0.015 |
| GLI3            | -inf | 0.042 | HILS1        | -inf | 0.008 |
| GLP2R           | -inf | 0.004 | HIST1H1T     | -inf | 0.025 |
| GNA15           | -inf | 0.049 | HIST1H2AH    | -inf | 0.020 |
| GNAO1           | -inf | 0.039 | HIST1H2BA    | -inf | 0.003 |
| GOLGA6A         | -inf | 0.015 | HIST1H2BE    | -inf | 0.048 |
| GOLGA6D         | -inf | 0.037 | HIST1H2BJ    | -inf | 0.022 |
| GOLGA8EP        | -inf | 0.027 | HIST1H3F     | -inf | 0.016 |
| GOLGA8F,GOLGA8G | -inf | 0.018 | HIST1H3J     | -inf | 0.014 |
| GOLGA8G         | -inf | 0.042 | HIST2H2AA3   | -inf | 0.009 |
| GOLGA8O         | -inf | 0.021 | HIST2H2BA    | -inf | 0.021 |
| GOLGA8S         | -inf | 0.036 | HLA-DRB1     | -inf | 0.010 |
| GOLGA8T         | -inf | 0.040 | HLA-G        | -inf | 0.039 |
| GP1BB           | -inf | 0.013 | HMP19        | -inf | 0.007 |
| GP5             | -inf | 0.017 | HMX3         | -inf | 0.008 |
| GPC5            | -inf | 0.029 | HNRNPA1P33   | -inf | 0.032 |
| GPIHBP1         | -inf | 0.015 | HOXA10-HOXA9 | -inf | 0.023 |
| GPR1            | -inf | 0.048 | HOXA11       | -inf | 0.043 |
| GPR110          | -inf | 0.021 | HOXA9        | -inf | 0.023 |
| GPR112          | -inf | 0.004 | HOXB9        | -inf | 0.027 |
| GPR142          | -inf | 0.026 | HOXC10       | -inf | 0.018 |
| GPR15           | -inf | 0.046 | HOXC13       | -inf | 0.025 |
| GPR150          | -inf | 0.022 | HOXC4        | -inf | 0.017 |
| GPR152          | -inf | 0.049 | HOXC5        | -inf | 0.006 |
| GPR156          | -inf | 0.022 | HOXC-AS1     | -inf | 0.003 |
| GPR180          | -inf | 0.025 | HPCA         | -inf | 0.033 |
| GPR21           | -inf | 0.024 | HPCAL4       | -inf | 0.032 |
| GPR34           | -inf | 0.033 | HPVC1        | -inf | 0.029 |
| GPR4            | -inf | 0.016 | HRASLS2      | -inf | 0.038 |
| GPR50           | -inf | 0.020 | HRH2         | -inf | 0.017 |
| GPR78           | -inf | 0.049 | HRH4         | -inf | 0.047 |
| GPR84           | -inf | 0.030 | HS3ST4       | -inf | 0.042 |
| GPX6            | -inf | 0.021 | HS6ST2       | -inf | 0.027 |
| GRAMD1C         | -inf | 0.021 | HS6ST3       | -inf | 0.049 |
| GRAPL           | -inf | 0.047 | HSPA6        | -inf | 0.047 |
| GRIA1           | -inf | 0.048 | HSPA7        | -inf | 0.042 |
| GRIA4           | -inf | 0.028 | HSPB2        | -inf | 0.013 |
| GRID2IP         | -inf | 0.020 | HSPB3        | -inf | 0.025 |
| GRIK1-AS1       | -inf | 0.013 | HSPB7        | -inf | 0.048 |
| GRIK1-AS2       | -inf | 0.030 | HTR2C        | -inf | 0.049 |
| GRIK2           | -inf | 0.033 | HTR3A        | -inf | 0.046 |
| GRM1            | -inf | 0.023 | HTR3C        | -inf | 0.032 |
| GRM2            | -inf | 0.048 | HTR7         | -inf | 0.030 |
| GRM8            | -inf | 0.008 | HTRA4        | -inf | 0.042 |
| GRPR            | -inf | 0.045 | HTT-AS       | -inf | 0.013 |
| GSC             | -inf | 0.007 | HYALP1       | -inf | 0.026 |
| GSDMC           | -inf | 0.020 | HYDIN2       | -inf | 0.031 |
| GSTA3           | -inf | 0.007 | HYPM         | -inf | 0.009 |
| GSTA5           | -inf | 0.045 | IFT43        | -inf | 0.024 |
| GSTP1           | -inf | 0.020 | IGFBP5       | -inf | 0.005 |
| GSTT2,GSTT2B    | -inf | 0.011 | IGFL4        | -inf | 0.021 |
| GSTT2B          | -inf | 0.027 | IGJ          | -inf | 0.045 |
| GUCA2A          | -inf | 0.030 | IGSF11       | -inf | 0.019 |
| GUCA2B          | -inf | 0.010 | IGSF9        | -inf | 0.018 |
| GUCY2C          | -inf | 0.043 | IL10RA       | -inf | 0.047 |
| GVINP1          | -inf | 0.026 | IL13RA2      | -inf | 0.014 |
| GYPE            | -inf | 0.040 | IL17B        | -inf | 0.049 |
| GYS2            | -inf | 0.015 | IL17C        | -inf | 0.015 |
| GZMA            | -inf | 0.006 | IL17REL      | -inf | 0.049 |
| GZMB            | -inf | 0.027 | IL1B         | -inf | 0.014 |
| GZMM            | -inf | 0.023 | IL20RA       | -inf | 0.004 |
| HAND1           | -inf | 0.025 | IL27         | -inf | 0.047 |
| HAS1            | -inf | 0.048 | IL2RB        | -inf | 0.038 |
| HBA2            | -inf | 0.039 | IL36G        | -inf | 0.024 |

|               |      |       |            |      |       |
|---------------|------|-------|------------|------|-------|
| IL5RA         | -inf | 0.030 | KRT35      | -inf | 0.024 |
| IL7R          | -inf | 0.043 | KRT38      | -inf | 0.009 |
| ILDR1         | -inf | 0.040 | KRT42P     | -inf | 0.013 |
| INHBA         | -inf | 0.007 | KRT6A      | -inf | 0.029 |
| INMT-FAM188B  | -inf | 0.030 | KRT79      | -inf | 0.023 |
| INSC          | -inf | 0.022 | KRT86      | -inf | 0.050 |
| INSIG1        | -inf | 0.036 | KRTAP10-10 | -inf | 0.007 |
| INSL3         | -inf | 0.045 | KRTAP1-1   | -inf | 0.039 |
| IQCF1         | -inf | 0.028 | KRTAP1-3   | -inf | 0.025 |
| IQSEC3        | -inf | 0.045 | KRTAP1-5   | -inf | 0.025 |
| IRAK3         | -inf | 0.048 | KRTAP2-1   | -inf | 0.007 |
| IRGM          | -inf | 0.038 | KRTAP2-4   | -inf | 0.007 |
| IRS2          | -inf | 0.005 | KRTAP3-2   | -inf | 0.019 |
| IRS4          | -inf | 0.004 | KRTAP4-1   | -inf | 0.010 |
| ISLR          | -inf | 0.033 | KRTAP4-12  | -inf | 0.034 |
| ITGA11        | -inf | 0.034 | KRTAP4-4   | -inf | 0.005 |
| ITGAD         | -inf | 0.010 | KRTAP4-6   | -inf | 0.018 |
| ITGBL1        | -inf | 0.047 | KRTAP4-7   | -inf | 0.047 |
| ITLN2         | -inf | 0.010 | KRTAP4-8   | -inf | 0.009 |
| ITPKB         | -inf | 0.012 | KRTAP4-9   | -inf | 0.050 |
| JPH2          | -inf | 0.032 | KRTAP5-10  | -inf | 0.013 |
| KCNA3         | -inf | 0.019 | KRTAP5-2   | -inf | 0.026 |
| KCNG1         | -inf | 0.037 | KRTAP5-5   | -inf | 0.032 |
| KCNH7         | -inf | 0.023 | KRTAP8-1   | -inf | 0.028 |
| KCNH8         | -inf | 0.032 | KRTAP9-9   | -inf | 0.042 |
| KCNJ12,KCNJ18 | -inf | 0.010 | LAMA4      | -inf | 0.020 |
| KCNJ15        | -inf | 0.047 | LAX1       | -inf | 0.027 |
| KCNJ18        | -inf | 0.037 | LBX1       | -inf | 0.028 |
| KCNJ2         | -inf | 0.041 | LCE1C      | -inf | 0.048 |
| KCNJ6         | -inf | 0.037 | LCE1D      | -inf | 0.026 |
| KCNJ9         | -inf | 0.044 | LCE2C      | -inf | 0.021 |
| KCNK1         | -inf | 0.021 | LCN1       | -inf | 0.035 |
| KCNK10        | -inf | 0.037 | LCP2       | -inf | 0.044 |
| KCNK2         | -inf | 0.024 | LCT        | -inf | 0.023 |
| KCNK3         | -inf | 0.020 | LDB2       | -inf | 0.048 |
| KCNK4         | -inf | 0.024 | LDB3       | -inf | 0.033 |
| KCNK5         | -inf | 0.033 | LDHB       | -inf | 0.043 |
| KCNK9         | -inf | 0.018 | LGALS4     | -inf | 0.045 |
| KCNN1         | -inf | 0.031 | LGI2       | -inf | 0.020 |
| KCNQ2         | -inf | 0.023 | LHB        | -inf | 0.010 |
| KCNQ3         | -inf | 0.020 | LHFP       | -inf | 0.004 |
| KCNQ5-AS1     | -inf | 0.047 | LHX1       | -inf | 0.009 |
| KCNU1         | -inf | 0.012 | LHX5       | -inf | 0.034 |
| KCTD12        | -inf | 0.009 | LILRA2     | -inf | 0.015 |
| KCTD19        | -inf | 0.036 | LILRA5     | -inf | 0.025 |
| KCTD4         | -inf | 0.021 | LINC00035  | -inf | 0.030 |
| KDR           | -inf | 0.008 | LINC00052  | -inf | 0.016 |
| KERA          | -inf | 0.018 | LINC00092  | -inf | 0.034 |
| KIAA0087      | -inf | 0.004 | LINC00161  | -inf | 0.003 |
| KIAA0226L     | -inf | 0.024 | LINC00162  | -inf | 0.027 |
| KIAA1045      | -inf | 0.032 | LINC00163  | -inf | 0.039 |
| KIAA1644      | -inf | 0.046 | LINC00184  | -inf | 0.046 |
| KIF19         | -inf | 0.038 | LINC00189  | -inf | 0.019 |
| KIF4B         | -inf | 0.039 | LINC00235  | -inf | 0.027 |
| KIRREL        | -inf | 0.040 | LINC00271  | -inf | 0.044 |
| KL            | -inf | 0.040 | LINC00299  | -inf | 0.038 |
| KLF14         | -inf | 0.037 | LINC00304  | -inf | 0.027 |
| KLF8          | -inf | 0.009 | LINC00337  | -inf | 0.032 |
| KLHDC8A       | -inf | 0.035 | LINC00351  | -inf | 0.039 |
| KLHL38        | -inf | 0.006 | LINC00368  | -inf | 0.017 |
| KLK10         | -inf | 0.008 | LINC00381  | -inf | 0.045 |
| KLK12         | -inf | 0.008 | LINC00397  | -inf | 0.035 |
| KLK3          | -inf | 0.003 | LINC00421  | -inf | 0.003 |
| KLRC1         | -inf | 0.046 | LINC00426  | -inf | 0.038 |
| KLRC4         | -inf | 0.035 | LINC00452  | -inf | 0.024 |
| KPRP          | -inf | 0.047 | LINC00460  | -inf | 0.032 |
| KRT14         | -inf | 0.046 | LINC00466  | -inf | 0.003 |
| KRT16         | -inf | 0.018 | LINC00469  | -inf | 0.022 |
| KRT16P2       | -inf | 0.010 | LINC00471  | -inf | 0.038 |
| KRT222        | -inf | 0.035 | LINC00488  | -inf | 0.014 |
| KRT32         | -inf | 0.012 | LINC00565  | -inf | 0.022 |
| KRT34         | -inf | 0.004 | LINC00570  | -inf | 0.038 |

|              |      |       |                    |      |       |
|--------------|------|-------|--------------------|------|-------|
| LINC00582    | -inf | 0.015 | LOC100190940       | -inf | 0.045 |
| LINC00589    | -inf | 0.038 | LOC100286922       | -inf | 0.018 |
| LINC00592    | -inf | 0.004 | LOC100288974       | -inf | 0.032 |
| LINC00595    | -inf | 0.039 | LOC100289650       | -inf | 0.031 |
| LINC00612    | -inf | 0.038 | LOC100303749       | -inf | 0.028 |
| LINC00637    | -inf | 0.008 | LOC100499489       | -inf | 0.028 |
| LINC00643    | -inf | 0.019 | LOC100505658       | -inf | 0.040 |
| LINC00656    | -inf | 0.048 | LOC100505782       | -inf | 0.019 |
| LINC00658    | -inf | 0.005 | LOC100505811       | -inf | 0.011 |
| LINC00678    | -inf | 0.047 | LOC100505921       | -inf | 0.035 |
| LINC00705    | -inf | 0.031 | LOC100506175       | -inf | 0.050 |
| LINC00707    | -inf | 0.036 | LOC100506188       | -inf | 0.044 |
| LINC00836    | -inf | 0.028 | LOC100506388       | -inf | 0.037 |
| LINC00842    | -inf | 0.041 | LOC100506688       | -inf | 0.036 |
| LINC00847    | -inf | 0.004 | LOC100506700       | -inf | 0.047 |
| LINC00861    | -inf | 0.034 | LOC100507250       | -inf | 0.029 |
| LINC00871    | -inf | 0.036 | LOC100507540       | -inf | 0.024 |
| LINC00884    | -inf | 0.006 | LOC100652824       | -inf | 0.012 |
| LINC00887    | -inf | 0.016 | LOC100996324       | -inf | 0.008 |
| LINC00889    | -inf | 0.028 | LOC100996455       | -inf | 0.018 |
| LINC00899    | -inf | 0.028 | LOC100996758,NPY4R | -inf | 0.010 |
| LINC00933    | -inf | 0.009 | LOC101060542       | -inf | 0.006 |
| LINC00955    | -inf | 0.027 | LOC101060553       | -inf | 0.050 |
| LINC00974    | -inf | 0.017 | LOC101926940       | -inf | 0.040 |
| LINC00992    | -inf | 0.047 | LOC101926955       | -inf | 0.014 |
| LINC00994    | -inf | 0.010 | LOC101927053       | -inf | 0.028 |
| LINC01005    | -inf | 0.022 | LOC101927102       | -inf | 0.032 |
| LINC01030    | -inf | 0.014 | LOC101927143       | -inf | 0.026 |
| LINC01088    | -inf | 0.021 | LOC101927207       | -inf | 0.015 |
| LINC01096    | -inf | 0.040 | LOC101927243       | -inf | 0.011 |
| LINC01098    | -inf | 0.030 | LOC101927282       | -inf | 0.018 |
| LINC01105    | -inf | 0.029 | LOC101927284       | -inf | 0.020 |
| LINC01107    | -inf | 0.016 | LOC101927286       | -inf | 0.034 |
| LINC01122    | -inf | 0.007 | LOC101927347       | -inf | 0.019 |
| LINC01127    | -inf | 0.021 | LOC101927354       | -inf | 0.003 |
| LINC01152    | -inf | 0.017 | LOC101927356       | -inf | 0.026 |
| LINC01164    | -inf | 0.037 | LOC101927410       | -inf | 0.022 |
| LINC01180    | -inf | 0.003 | LOC101927418       | -inf | 0.021 |
| LINC01193    | -inf | 0.029 | LOC101927457       | -inf | 0.012 |
| LINC01206    | -inf | 0.015 | LOC101927502       | -inf | 0.037 |
| LINC01214    | -inf | 0.041 | LOC101927630       | -inf | 0.031 |
| LINC01215    | -inf | 0.025 | LOC101927653       | -inf | 0.040 |
| LINC01220    | -inf | 0.020 | LOC101927666       | -inf | 0.003 |
| LINC01226    | -inf | 0.023 | LOC101927718       | -inf | 0.009 |
| LINC01247    | -inf | 0.027 | LOC101927735       | -inf | 0.030 |
| LINC01250    | -inf | 0.022 | LOC101927811       | -inf | 0.048 |
| LINC01251    | -inf | 0.003 | LOC101927814       | -inf | 0.035 |
| LINC01260    | -inf | 0.038 | LOC101927924       | -inf | 0.048 |
| LINC01267    | -inf | 0.034 | LOC101927926       | -inf | 0.035 |
| LINC01305    | -inf | 0.009 | LOC101927931       | -inf | 0.012 |
| LINC01344    | -inf | 0.005 | LOC101927950       | -inf | 0.027 |
| LINC01352    | -inf | 0.005 | LOC101928001       | -inf | 0.006 |
| LINC01363    | -inf | 0.034 | LOC101928035       | -inf | 0.041 |
| LIX1         | -inf | 0.044 | LOC101928043       | -inf | 0.014 |
| LMO2         | -inf | 0.031 | LOC101928136       | -inf | 0.020 |
| LMO7DN       | -inf | 0.005 | LOC101928154       | -inf | 0.032 |
| LOC100126784 | -inf | 0.036 | LOC101928203       | -inf | 0.007 |
| LOC100128164 | -inf | 0.018 | LOC101928254       | -inf | 0.016 |
| LOC100128233 | -inf | 0.035 | LOC101928266       | -inf | 0.041 |
| LOC100128505 | -inf | 0.004 | LOC101928363       | -inf | 0.031 |
| LOC100128568 | -inf | 0.042 | LOC101928386       | -inf | 0.024 |
| LOC100128770 | -inf | 0.043 | LOC101928436       | -inf | 0.017 |
| LOC100128993 | -inf | 0.009 | LOC101928446       | -inf | 0.015 |
| LOC100129924 | -inf | 0.013 | LOC101928491       | -inf | 0.005 |
| LOC100130238 | -inf | 0.046 | LOC101928495       | -inf | 0.042 |
| LOC100130331 | -inf | 0.030 | LOC101928517       | -inf | 0.006 |
| LOC100130899 | -inf | 0.040 | LOC101928530       | -inf | 0.006 |
| LOC100130992 | -inf | 0.005 | LOC101928537       | -inf | 0.006 |
| LOC100131347 | -inf | 0.007 | LOC101928539       | -inf | 0.046 |
| LOC100132781 | -inf | 0.015 | LOC101928604       | -inf | 0.020 |
| LOC100133461 | -inf | 0.010 | LOC101928674       | -inf | 0.026 |
| LOC100134391 | -inf | 0.035 | LOC101928731       | -inf | 0.036 |



|              |      |       |             |      |       |
|--------------|------|-------|-------------|------|-------|
| LOC101928767 | -inf | 0.027 | LOC729159   | -inf | 0.017 |
| LOC101928796 | -inf | 0.012 | LOC729609   | -inf | 0.027 |
| LOC101928909 | -inf | 0.049 | LOC730668   | -inf | 0.003 |
| LOC101928943 | -inf | 0.038 | LOC91450    | -inf | 0.015 |
| LOC101929076 | -inf | 0.025 | LPL         | -inf | 0.050 |
| LOC101929084 | -inf | 0.010 | LPO         | -inf | 0.017 |
| LOC101929148 | -inf | 0.015 | LRRC10B     | -inf | 0.020 |
| LOC101929265 | -inf | 0.006 | LRRC14B     | -inf | 0.038 |
| LOC101929295 | -inf | 0.036 | LRRC3C      | -inf | 0.037 |
| LOC101929335 | -inf | 0.006 | LRRC4C      | -inf | 0.027 |
| LOC101929344 | -inf | 0.014 | LRRN1       | -inf | 0.021 |
| LOC101929369 | -inf | 0.024 | LRRN3       | -inf | 0.049 |
| LOC101929380 | -inf | 0.031 | LRRN4CL     | -inf | 0.034 |
| LOC101929505 | -inf | 0.032 | LRTM2       | -inf | 0.030 |
| LOC101929539 | -inf | 0.049 | LSAMP-AS1   | -inf | 0.022 |
| LOC101929549 | -inf | 0.008 | LTK         | -inf | 0.004 |
| LOC101929690 | -inf | 0.043 | LUM         | -inf | 0.040 |
| LOC101929736 | -inf | 0.012 | LUZP2       | -inf | 0.037 |
| LOC102477328 | -inf | 0.006 | LY75        | -inf | 0.020 |
| LOC102723344 | -inf | 0.015 | LY75-CD302  | -inf | 0.017 |
| LOC102723373 | -inf | 0.030 | LY9         | -inf | 0.035 |
| LOC102723513 | -inf | 0.027 | LYG2        | -inf | 0.021 |
| LOC102723631 | -inf | 0.026 | LYPD5       | -inf | 0.037 |
| LOC102724094 | -inf | 0.008 | LYPLA2P2    | -inf | 0.034 |
| LOC102724153 | -inf | 0.015 | LYPLAL1-AS1 | -inf | 0.007 |
| LOC102724467 | -inf | 0.046 | LYZL1       | -inf | 0.025 |
| LOC102724596 | -inf | 0.032 | MAB21L1     | -inf | 0.012 |
| LOC102724691 | -inf | 0.018 | MAGEA3      | -inf | 0.050 |
| LOC145474    | -inf | 0.048 | MAGEB2      | -inf | 0.048 |
| LOC149373    | -inf | 0.030 | MAGEC1      | -inf | 0.033 |
| LOC1720      | -inf | 0.019 | MAGEC2      | -inf | 0.037 |
| LOC253573    | -inf | 0.032 | MAL         | -inf | 0.049 |
| LOC283070    | -inf | 0.041 | MAPK15      | -inf | 0.011 |
| LOC283575    | -inf | 0.004 | MARCH4      | -inf | 0.047 |
| LOC283731    | -inf | 0.004 | MARCO       | -inf | 0.031 |
| LOC284080    | -inf | 0.009 | MARK1       | -inf | 0.027 |
| LOC284344    | -inf | 0.043 | MARK2P9     | -inf | 0.007 |
| LOC284578    | -inf | 0.021 | MATK        | -inf | 0.035 |
| LOC284950    | -inf | 0.048 | MATN1       | -inf | 0.048 |
| LOC285629    | -inf | 0.003 | MATN1-AS1   | -inf | 0.048 |
| LOC285740    | -inf | 0.035 | MATN4       | -inf | 0.032 |
| LOC286059    | -inf | 0.004 | MB21D1      | -inf | 0.018 |
| LOC339807    | -inf | 0.032 | MBL1P       | -inf | 0.010 |
| LOC340017    | -inf | 0.047 | MCEMP1      | -inf | 0.043 |
| LOC341056    | -inf | 0.043 | MCIDAS      | -inf | 0.024 |
| LOC388242    | -inf | 0.029 | MDGA1       | -inf | 0.025 |
| LOC388436    | -inf | 0.009 | MDGA2       | -inf | 0.039 |
| LOC388780    | -inf | 0.028 | ME1         | -inf | 0.044 |
| LOC388849    | -inf | 0.029 | ME3         | -inf | 0.049 |
| LOC388942    | -inf | 0.040 | MEF2C       | -inf | 0.010 |
| LOC389247    | -inf | 0.006 | MEG3        | -inf | 0.046 |
| LOC392196    | -inf | 0.013 | MESP2       | -inf | 0.033 |
| LOC399715    | -inf | 0.015 | METTTL11B   | -inf | 0.049 |
| LOC400043    | -inf | 0.028 | METTTL21EP  | -inf | 0.011 |
| LOC400558    | -inf | 0.011 | MFAP5       | -inf | 0.039 |
| LOC400644    | -inf | 0.036 | MFRP        | -inf | 0.014 |
| LOC400863    | -inf | 0.033 | MGC39584    | -inf | 0.035 |
| LOC407835    | -inf | 0.042 | MGP         | -inf | 0.035 |
| LOC440461    | -inf | 0.010 | MIA         | -inf | 0.031 |
| LOC440602    | -inf | 0.007 | MILR1       | -inf | 0.020 |
| LOC440704    | -inf | 0.019 | MINOS1P1    | -inf | 0.047 |
| LOC441204    | -inf | 0.033 | MIR124-2HG  | -inf | 0.047 |
| LOC442132    | -inf | 0.020 | MIR125A     | -inf | 0.017 |
| LOC643201    | -inf | 0.036 | MIR1282     | -inf | 0.035 |
| LOC643387    | -inf | 0.046 | MIR1909     | -inf | 0.020 |
| LOC643733    | -inf | 0.044 | MIR202HG    | -inf | 0.025 |
| LOC644936    | -inf | 0.045 | MIR205HG    | -inf | 0.034 |
| LOC645949    | -inf | 0.008 | MIR3916     | -inf | 0.041 |
| LOC646862    | -inf | 0.031 | MIR433      | -inf | 0.035 |
| LOC649352    | -inf | 0.041 | MIR6126     | -inf | 0.038 |
| LOC653602    | -inf | 0.039 | MIR641      | -inf | 0.027 |
| LOC729041    | -inf | 0.022 | MIR6516     | -inf | 0.027 |

|                   |      |       |           |      |       |
|-------------------|------|-------|-----------|------|-------|
| MIR6753           | -inf | 0.038 | NKAIN2    | -inf | 0.007 |
| MIR7-3HG          | -inf | 0.044 | NKAPL     | -inf | 0.042 |
| MIR8078           | -inf | 0.006 | NLRP10    | -inf | 0.028 |
| MIR941-2,MIR941-3 | -inf | 0.038 | NLRP4     | -inf | 0.044 |
| MLC1              | -inf | 0.032 | NOS1      | -inf | 0.035 |
| MLPH              | -inf | 0.008 | NOVA2     | -inf | 0.011 |
| MMP10             | -inf | 0.012 | NPAS3     | -inf | 0.031 |
| MMP12             | -inf | 0.037 | NPFFR2    | -inf | 0.025 |
| MMP20             | -inf | 0.021 | NPPB      | -inf | 0.027 |
| MMP23B            | -inf | 0.042 | NPPC      | -inf | 0.024 |
| MMP9              | -inf | 0.012 | NPTX2     | -inf | 0.003 |
| MMRN2             | -inf | 0.042 | NPY4R     | -inf | 0.006 |
| MOG               | -inf | 0.041 | NRADDP    | -inf | 0.020 |
| MOXD1             | -inf | 0.005 | NRAP      | -inf | 0.007 |
| MPEG1             | -inf | 0.035 | NRK       | -inf | 0.027 |
| MPO               | -inf | 0.016 | NRROS     | -inf | 0.011 |
| MRC2              | -inf | 0.003 | NRXN3     | -inf | 0.046 |
| MRO               | -inf | 0.031 | NTF4      | -inf | 0.039 |
| MROH2A            | -inf | 0.011 | NTN5      | -inf | 0.034 |
| MROH2B            | -inf | 0.025 | NTNG2     | -inf | 0.042 |
| MS4A14            | -inf | 0.005 | NTRK3     | -inf | 0.027 |
| MS4A7             | -inf | 0.008 | NUDT11    | -inf | 0.012 |
| MSL3P1            | -inf | 0.021 | NUTM1     | -inf | 0.008 |
| MSMB              | -inf | 0.049 | NXF3      | -inf | 0.027 |
| MSR1              | -inf | 0.006 | NXNL2     | -inf | 0.014 |
| MSTN              | -inf | 0.018 | NXPE2     | -inf | 0.041 |
| MT1DP             | -inf | 0.045 | OBP2A     | -inf | 0.021 |
| MT1H              | -inf | 0.036 | OBP2B     | -inf | 0.020 |
| MT1JP             | -inf | 0.044 | ODF3L2    | -inf | 0.008 |
| MT1L              | -inf | 0.017 | OLFM1     | -inf | 0.037 |
| MTMR8             | -inf | 0.035 | OLFML2B   | -inf | 0.045 |
| MTRNR2L5          | -inf | 0.039 | ONECUT3   | -inf | 0.015 |
| MTUS2             | -inf | 0.043 | OR10H2    | -inf | 0.013 |
| MTUS2-AS1         | -inf | 0.038 | OR10H3    | -inf | 0.025 |
| MUC1              | -inf | 0.012 | OR10V2P   | -inf | 0.023 |
| MUC12             | -inf | 0.013 | OR1B1     | -inf | 0.010 |
| MUC16             | -inf | 0.039 | OR1L8     | -inf | 0.026 |
| MUC17             | -inf | 0.031 | OR1Q1     | -inf | 0.009 |
| MUC5B             | -inf | 0.049 | OR2A7     | -inf | 0.040 |
| MYCN              | -inf | 0.014 | OR2AE1    | -inf | 0.031 |
| MYL1              | -inf | 0.006 | OR4C6     | -inf | 0.028 |
| MYL10             | -inf | 0.014 | OR4F15    | -inf | 0.032 |
| MYL2              | -inf | 0.033 | OR51B2    | -inf | 0.038 |
| MYL7              | -inf | 0.029 | OR51B4    | -inf | 0.008 |
| MYLPF             | -inf | 0.030 | OR51B6    | -inf | 0.033 |
| MYO16             | -inf | 0.045 | OR51E2    | -inf | 0.023 |
| MYOC              | -inf | 0.012 | OR52B6    | -inf | 0.006 |
| MYOM2             | -inf | 0.016 | OR52K2    | -inf | 0.023 |
| MYOZ1             | -inf | 0.044 | OR56B4    | -inf | 0.039 |
| MYOZ2             | -inf | 0.020 | OR6C74    | -inf | 0.009 |
| MYPN              | -inf | 0.006 | OR7C1     | -inf | 0.028 |
| MYT1L             | -inf | 0.022 | OSBPL5    | -inf | 0.010 |
| MZB1              | -inf | 0.012 | OSM       | -inf | 0.025 |
| NACAP1            | -inf | 0.029 | OTOA      | -inf | 0.031 |
| NANOS3            | -inf | 0.030 | OTOGL     | -inf | 0.026 |
| NAPSB             | -inf | 0.035 | OTOP2     | -inf | 0.042 |
| NAT16             | -inf | 0.048 | OTOS      | -inf | 0.037 |
| NBEAP1            | -inf | 0.043 | OVOL1-AS1 | -inf | 0.048 |
| NBPF13P           | -inf | 0.044 | OVOL3     | -inf | 0.025 |
| NBPF18P           | -inf | 0.043 | OXT       | -inf | 0.014 |
| NCAM2             | -inf | 0.037 | P2RX7     | -inf | 0.035 |
| NCAN              | -inf | 0.004 | P2RY14    | -inf | 0.034 |
| NCCRP1            | -inf | 0.050 | P4HA3     | -inf | 0.019 |
| NCF4              | -inf | 0.007 | P4HTM     | -inf | 0.036 |
| NCKAP1L           | -inf | 0.044 | PACSLN1   | -inf | 0.019 |
| NDST4             | -inf | 0.012 | PADI2     | -inf | 0.015 |
| NEFM              | -inf | 0.043 | PADI3     | -inf | 0.050 |
| NFASC             | -inf | 0.025 | PADI4     | -inf | 0.046 |
| NFIA-AS2          | -inf | 0.023 | PAMR1     | -inf | 0.028 |
| NHEG1             | -inf | 0.026 | PAPL      | -inf | 0.043 |
| NIM1K             | -inf | 0.005 | PAPOLB    | -inf | 0.015 |
| NIPAL4            | -inf | 0.046 | PAPPA2    | -inf | 0.005 |

|            |      |       |              |      |       |
|------------|------|-------|--------------|------|-------|
| PARM1      | -inf | 0.004 | PRG2         | -inf | 0.010 |
| PARP15     | -inf | 0.019 | PRICKLE2-AS1 | -inf | 0.031 |
| PARP6      | -inf | 0.019 | PRKCB        | -inf | 0.026 |
| PARVG      | -inf | 0.044 | PRKCDBP      | -inf | 0.038 |
| PATE2      | -inf | 0.007 | PRKG1        | -inf | 0.042 |
| PATE3      | -inf | 0.009 | PROK2        | -inf | 0.012 |
| PAX3       | -inf | 0.014 | PROM2        | -inf | 0.031 |
| PAX5       | -inf | 0.033 | PRPH         | -inf | 0.004 |
| PBX1       | -inf | 0.017 | PRR30        | -inf | 0.012 |
| PBX4       | -inf | 0.005 | PRR35        | -inf | 0.029 |
| PCAT5      | -inf | 0.032 | PRR9         | -inf | 0.037 |
| PCBP3      | -inf | 0.045 | PRRX1        | -inf | 0.011 |
| PCDH15     | -inf | 0.010 | PRSS35       | -inf | 0.042 |
| PCDH9      | -inf | 0.023 | PRSS55       | -inf | 0.010 |
| PCDHB17    | -inf | 0.029 | PRSS56       | -inf | 0.017 |
| PCDHGA2    | -inf | 0.029 | PRSS57       | -inf | 0.017 |
| PCDHGB7    | -inf | 0.019 | PRTFDC1      | -inf | 0.004 |
| PCDHGC4    | -inf | 0.003 | PSG1         | -inf | 0.018 |
| PCED1B-AS1 | -inf | 0.032 | PSG10P       | -inf | 0.045 |
| PDCD1LG2   | -inf | 0.032 | PSG11        | -inf | 0.025 |
| PDE10A     | -inf | 0.024 | PSG2         | -inf | 0.044 |
| PDE1B      | -inf | 0.012 | PSG3         | -inf | 0.017 |
| PDE1C      | -inf | 0.007 | PSG5         | -inf | 0.026 |
| PDE7B      | -inf | 0.044 | PSG7         | -inf | 0.008 |
| PK4        | -inf | 0.040 | PSG8         | -inf | 0.046 |
| PDZD4      | -inf | 0.041 | PSMA8        | -inf | 0.016 |
| PEX11G     | -inf | 0.047 | PSMB11       | -inf | 0.032 |
| PGAM1P5    | -inf | 0.049 | PSORS1C1     | -inf | 0.012 |
| PGPEP1L    | -inf | 0.034 | PTCHD2       | -inf | 0.029 |
| PHACTR3    | -inf | 0.020 | PTCRA        | -inf | 0.035 |
| PI15       | -inf | 0.018 | PTGDS        | -inf | 0.007 |
| PIK3C2G    | -inf | 0.012 | PTGER1       | -inf | 0.042 |
| PIK3CG     | -inf | 0.032 | PTGER3       | -inf | 0.025 |
| PILRA      | -inf | 0.031 | PTGER4       | -inf | 0.048 |
| PINLYP     | -inf | 0.033 | PTGIR        | -inf | 0.018 |
| PIWIL3     | -inf | 0.029 | PTGS1        | -inf | 0.045 |
| PKD2L2     | -inf | 0.037 | PTN          | -inf | 0.045 |
| PKNOX2     | -inf | 0.009 | PTPN13       | -inf | 0.006 |
| PKP1       | -inf | 0.007 | PTPN5        | -inf | 0.022 |
| PLA1A      | -inf | 0.043 | PTPN7        | -inf | 0.041 |
| PLA2G10    | -inf | 0.011 | PTPRD        | -inf | 0.006 |
| PLA2G4A    | -inf | 0.045 | PTPRE        | -inf | 0.011 |
| PLA2G4E    | -inf | 0.009 | PTPRN        | -inf | 0.024 |
| PLCB2      | -inf | 0.030 | PTPRR        | -inf | 0.038 |
| PLCXD3     | -inf | 0.031 | PTPRT        | -inf | 0.036 |
| PLD5       | -inf | 0.010 | PTX3         | -inf | 0.030 |
| PLEK       | -inf | 0.041 | PXDN         | -inf | 0.048 |
| PLK5       | -inf | 0.049 | PXDNL        | -inf | 0.004 |
| PLN        | -inf | 0.008 | PYY          | -inf | 0.003 |
| PLVAP      | -inf | 0.035 | PYY2         | -inf | 0.018 |
| PLXDC1     | -inf | 0.050 | RAB27B       | -inf | 0.024 |
| PLXNA4     | -inf | 0.036 | RAB33A       | -inf | 0.015 |
| POMC       | -inf | 0.031 | RAB34        | -inf | 0.048 |
| POSTN      | -inf | 0.028 | RAB38        | -inf | 0.009 |
| POTEC      | -inf | 0.019 | RAB41        | -inf | 0.034 |
| POU2F3     | -inf | 0.037 | RAET1E       | -inf | 0.021 |
| POU5F1B    | -inf | 0.036 | RAET1L       | -inf | 0.024 |
| POU5F1P3   | -inf | 0.032 | RAG2         | -inf | 0.043 |
| POU6F2-AS1 | -inf | 0.025 | RANBP17      | -inf | 0.013 |
| PPAP2C     | -inf | 0.038 | RARRES1      | -inf | 0.049 |
| PPAPDC1A   | -inf | 0.033 | RASD2        | -inf | 0.011 |
| PPEF1      | -inf | 0.013 | RASGEF1C     | -inf | 0.010 |
| PPEF2      | -inf | 0.022 | RASGRF2-AS1  | -inf | 0.007 |
| PPP1R14C   | -inf | 0.047 | RAX2         | -inf | 0.025 |
| PPP1R16B   | -inf | 0.038 | RBAKDN       | -inf | 0.045 |
| PPP1R2P9   | -inf | 0.048 | RBAK-RBAKDN  | -inf | 0.048 |
| PPP2R2B    | -inf | 0.018 | RBFOX1       | -inf | 0.004 |
| PPY        | -inf | 0.003 | RBMS3        | -inf | 0.035 |
| PRDM1      | -inf | 0.031 | RCAN2        | -inf | 0.039 |
| PRDM8      | -inf | 0.023 | RCSD1        | -inf | 0.049 |
| PREX1      | -inf | 0.048 | RD3L         | -inf | 0.036 |
| PRG1       | -inf | 0.049 | REC114       | -inf | 0.018 |

|                 |      |       |              |      |       |
|-----------------|------|-------|--------------|------|-------|
| REG3G           | -inf | 0.031 | SCG3         | -inf | 0.042 |
| REM2            | -inf | 0.029 | SCGB1D2      | -inf | 0.009 |
| REN             | -inf | 0.016 | SCGB2A2      | -inf | 0.030 |
| RFPL1           | -inf | 0.047 | SCIN         | -inf | 0.020 |
| RFPL2           | -inf | 0.025 | SCN7A        | -inf | 0.026 |
| RFPL4A          | -inf | 0.029 | SCNN1B       | -inf | 0.009 |
| RFPL4AL1        | -inf | 0.040 | SCRT1        | -inf | 0.033 |
| RFX8            | -inf | 0.043 | SCRT2        | -inf | 0.023 |
| RGPD5,RGPD8     | -inf | 0.006 | SCTR         | -inf | 0.044 |
| RGPD6           | -inf | 0.005 | SDS          | -inf | 0.022 |
| RGS11           | -inf | 0.000 | SEC14L4      | -inf | 0.021 |
| RGS17           | -inf | 0.036 | SEC14L6      | -inf | 0.006 |
| RGS22           | -inf | 0.029 | SELV         | -inf | 0.021 |
| RGS4            | -inf | 0.034 | SEMA5B       | -inf | 0.039 |
| RGS6            | -inf | 0.025 | SEPT12       | -inf | 0.019 |
| RHBDL3          | -inf | 0.009 | SEPT7P9      | -inf | 0.019 |
| RHOJ            | -inf | 0.025 | SERHL        | -inf | 0.024 |
| RIMBP2          | -inf | 0.019 | SERPINB5     | -inf | 0.042 |
| RIMBP3B,RIMBP3C | -inf | 0.035 | SERPINB7     | -inf | 0.031 |
| RIMBP3C         | -inf | 0.021 | SERPINE3     | -inf | 0.015 |
| RIMS1           | -inf | 0.025 | SERTAD4      | -inf | 0.004 |
| RIMS2           | -inf | 0.044 | SERTAD4-AS1  | -inf | 0.010 |
| RIPPLY1         | -inf | 0.015 | SFRP1        | -inf | 0.021 |
| RLBP1           | -inf | 0.005 | SFTA1P       | -inf | 0.003 |
| RLN2            | -inf | 0.046 | SGCA         | -inf | 0.027 |
| RMST            | -inf | 0.028 | SGCG         | -inf | 0.029 |
| RNASE1          | -inf | 0.027 | SH2D4B       | -inf | 0.019 |
| RNF112          | -inf | 0.013 | SH2D6        | -inf | 0.029 |
| RNF126P1        | -inf | 0.013 | SHANK1       | -inf | 0.025 |
| RNF165          | -inf | 0.012 | SHANK2-AS3   | -inf | 0.039 |
| RNF175          | -inf | 0.021 | SHC4         | -inf | 0.018 |
| RNF212          | -inf | 0.030 | SHE          | -inf | 0.003 |
| RNF223          | -inf | 0.032 | SHISA2       | -inf | 0.038 |
| RNU11           | -inf | 0.050 | SHISA3       | -inf | 0.046 |
| ROBO2           | -inf | 0.034 | SHROOM3      | -inf | 0.023 |
| ROPN1L-AS1      | -inf | 0.016 | SIGLEC12     | -inf | 0.044 |
| ROR2            | -inf | 0.043 | SIGLEC14     | -inf | 0.011 |
| RPE65           | -inf | 0.036 | SIGLEC15     | -inf | 0.009 |
| RPH3A           | -inf | 0.022 | SIGLEC17P    | -inf | 0.049 |
| RPL13AP20       | -inf | 0.032 | SIGLEC9      | -inf | 0.026 |
| RPL34-AS1       | -inf | 0.013 | SIRPB2       | -inf | 0.011 |
| RPS10P7         | -inf | 0.005 | SIT1         | -inf | 0.032 |
| RPS6KA6         | -inf | 0.032 | SLAMF7       | -inf | 0.036 |
| RPSAP52         | -inf | 0.028 | SLAMF9       | -inf | 0.049 |
| RPTN            | -inf | 0.009 | SLC10A1      | -inf | 0.047 |
| RRN3P2          | -inf | 0.019 | SLC10A6      | -inf | 0.037 |
| RSAD2           | -inf | 0.018 | SLC16A12     | -inf | 0.025 |
| RSPH1           | -inf | 0.016 | SLC18A1      | -inf | 0.038 |
| RSPO2           | -inf | 0.010 | SLC1A6       | -inf | 0.008 |
| RSPO4           | -inf | 0.006 | SLC22A16     | -inf | 0.044 |
| RTP1            | -inf | 0.016 | SLC22A2      | -inf | 0.011 |
| RTP3            | -inf | 0.032 | SLC24A2      | -inf | 0.030 |
| RUFY4           | -inf | 0.043 | SLC24A3      | -inf | 0.006 |
| RUNX1T1         | -inf | 0.007 | SLC25A30-AS1 | -inf | 0.015 |
| RUNX2           | -inf | 0.016 | SLC2A5       | -inf | 0.003 |
| RXFP1           | -inf | 0.032 | SLC30A4      | -inf | 0.036 |
| RYR2            | -inf | 0.017 | SLC34A1      | -inf | 0.006 |
| S100A5          | -inf | 0.021 | SLC34A2      | -inf | 0.038 |
| S100A7A         | -inf | 0.039 | SLC35F3      | -inf | 0.041 |
| S100Z           | -inf | 0.019 | SLC35F4      | -inf | 0.038 |
| S1PR1           | -inf | 0.026 | SLC35G3      | -inf | 0.036 |
| S1PR5           | -inf | 0.007 | SLC35G5      | -inf | 0.015 |
| SALL3           | -inf | 0.030 | SLC36A3      | -inf | 0.027 |
| SAMD12-AS1      | -inf | 0.023 | SLC39A12     | -inf | 0.034 |
| SAMD3           | -inf | 0.007 | SLC45A2      | -inf | 0.016 |
| SAMD9L          | -inf | 0.003 | SLC45A4      | -inf | 0.013 |
| SATB1           | -inf | 0.035 | SLC4A1       | -inf | 0.018 |
| SBSN            | -inf | 0.006 | SLC4A10      | -inf | 0.016 |
| SCARNA16        | -inf | 0.020 | SLC4A4       | -inf | 0.029 |
| SCARNA4         | -inf | 0.024 | SLC52A3      | -inf | 0.020 |
| SCEL            | -inf | 0.033 | SLC6A17      | -inf | 0.048 |
| SCG2            | -inf | 0.023 | SLC6A18      | -inf | 0.007 |

|                 |      |       |                  |      |       |
|-----------------|------|-------|------------------|------|-------|
| SLC6A3          | -inf | 0.014 | STK32A           | -inf | 0.014 |
| SLC7A14         | -inf | 0.020 | STK32B           | -inf | 0.035 |
| SLC8A1          | -inf | 0.021 | STMN4            | -inf | 0.031 |
| SLC8A3          | -inf | 0.047 | STRA8            | -inf | 0.004 |
| SLC9C1          | -inf | 0.006 | STYK1            | -inf | 0.016 |
| SLCO1B7         | -inf | 0.017 | SULT1C2P1        | -inf | 0.022 |
| SLCO6A1         | -inf | 0.047 | SULT4A1          | -inf | 0.021 |
| SLED1           | -inf | 0.039 | SULT6B1          | -inf | 0.008 |
| SLFN14          | -inf | 0.050 | SUMO4            | -inf | 0.008 |
| SLIT3           | -inf | 0.037 | SUN3             | -inf | 0.011 |
| SLITRK2         | -inf | 0.043 | SUSD4            | -inf | 0.008 |
| SLPI            | -inf | 0.010 | SUSD5            | -inf | 0.043 |
| SMCO2           | -inf | 0.036 | SVEP1            | -inf | 0.027 |
| SMCR9           | -inf | 0.005 | SVILP1           | -inf | 0.018 |
| SMIM18          | -inf | 0.041 | SYK              | -inf | 0.029 |
| SMIM21          | -inf | 0.038 | SYN2             | -inf | 0.024 |
| SMIM22          | -inf | 0.040 | SYNPO2L          | -inf | 0.012 |
| SMIM2-AS1       | -inf | 0.018 | SYP-AS1          | -inf | 0.025 |
| SMIM9           | -inf | 0.033 | SYT1             | -inf | 0.026 |
| SMKR1           | -inf | 0.032 | SYT16            | -inf | 0.008 |
| SMOC2           | -inf | 0.048 | TAAR6            | -inf | 0.020 |
| SMTNL1          | -inf | 0.011 | TAAR8            | -inf | 0.034 |
| SNAR-E          | -inf | 0.040 | TAAR9            | -inf | 0.035 |
| SNCAIP          | -inf | 0.046 | TAF1L            | -inf | 0.019 |
| SNHG15          | -inf | 0.003 | TAL1             | -inf | 0.005 |
| SNHG22          | -inf | 0.034 | TAL2             | -inf | 0.041 |
| SNORA16B        | -inf | 0.013 | TARM1            | -inf | 0.036 |
| SNORA18         | -inf | 0.008 | TAS2R50          | -inf | 0.050 |
| SNORA21         | -inf | 0.032 | TBX1             | -inf | 0.009 |
| SNORA24         | -inf | 0.040 | TBX21            | -inf | 0.006 |
| SNORA26         | -inf | 0.036 | TC2N             | -inf | 0.047 |
| SNORA67         | -inf | 0.022 | TCEAL2           | -inf | 0.022 |
| SNORA72         | -inf | 0.039 | TCEAL5           | -inf | 0.034 |
| SNORA81         | -inf | 0.014 | TCEB3C,TCEB3CL   | -inf | 0.019 |
| SNORD15A        | -inf | 0.017 | TCEB3CL,TCEB3CL2 | -inf | 0.027 |
| SNORD94         | -inf | 0.050 | TCEB3CL2         | -inf | 0.047 |
| SNTG1           | -inf | 0.010 | TCERG1L          | -inf | 0.042 |
| SNTG2           | -inf | 0.036 | TCN1             | -inf | 0.023 |
| SNTN            | -inf | 0.012 | TCTE1            | -inf | 0.011 |
| SOCS2-AS1       | -inf | 0.017 | TDRD9            | -inf | 0.023 |
| SORCS3          | -inf | 0.025 | TDRG1            | -inf | 0.022 |
| SOX2-OT         | -inf | 0.034 | TEK              | -inf | 0.022 |
| SOX30           | -inf | 0.015 | TEKT1            | -inf | 0.047 |
| SP8             | -inf | 0.026 | TENM2            | -inf | 0.033 |
| SPACA6P-AS      | -inf | 0.035 | TENM4            | -inf | 0.035 |
| SPAG17          | -inf | 0.049 | TERC             | -inf | 0.047 |
| SPANXC,SPANXD   | -inf | 0.036 | TEX11            | -inf | 0.023 |
| SPANXD          | -inf | 0.022 | TEX14            | -inf | 0.038 |
| SPANXN1         | -inf | 0.042 | TEX26-AS1        | -inf | 0.017 |
| SPANXN3         | -inf | 0.036 | TEX30            | -inf | 0.026 |
| SPATA31E1       | -inf | 0.011 | TEX38            | -inf | 0.002 |
| SPATA32         | -inf | 0.046 | TFAP2C           | -inf | 0.038 |
| SPATA41         | -inf | 0.026 | TG               | -inf | 0.007 |
| SPDEF           | -inf | 0.028 | TGFB2            | -inf | 0.045 |
| SPERT           | -inf | 0.018 | THBD             | -inf | 0.022 |
| SPINK5          | -inf | 0.047 | THEG             | -inf | 0.034 |
| SPRR2D          | -inf | 0.024 | THEM5            | -inf | 0.041 |
| SPTA1           | -inf | 0.032 | THSD7B           | -inf | 0.030 |
| SRGAP2B,SRGAP2C | -inf | 0.024 | THY1             | -inf | 0.033 |
| SRGN            | -inf | 0.012 | TLR5             | -inf | 0.020 |
| SRL             | -inf | 0.045 | TMCC3            | -inf | 0.040 |
| SRRM4           | -inf | 0.020 | TMCO5B           | -inf | 0.007 |
| SSMEM1          | -inf | 0.003 | TMEFF2           | -inf | 0.049 |
| SSPN            | -inf | 0.014 | TMEM108          | -inf | 0.029 |
| SSX1            | -inf | 0.006 | TMEM130          | -inf | 0.047 |
| SSX6            | -inf | 0.031 | TMEM14E          | -inf | 0.006 |
| ST18            | -inf | 0.043 | TMEM171          | -inf | 0.032 |
| ST6GALNAC1      | -inf | 0.042 | TMEM191C         | -inf | 0.034 |
| ST6GALNAC5      | -inf | 0.017 | TMEM200C         | -inf | 0.028 |
| ST7-AS2         | -inf | 0.012 | TMEM225          | -inf | 0.041 |
| ST8SIA4         | -inf | 0.033 | TMEM255B         | -inf | 0.030 |
| STEAP1B         | -inf | 0.050 | TMEM31           | -inf | 0.017 |

|                 |      |       |           |      |       |
|-----------------|------|-------|-----------|------|-------|
| TMEM52B         | -inf | 0.028 | VAV1      | -inf | 0.016 |
| TMIGD1          | -inf | 0.045 | VAX1      | -inf | 0.034 |
| TMPRSS11D       | -inf | 0.044 | VCX3B     | -inf | 0.048 |
| TMPRSS11F       | -inf | 0.022 | VIM-AS1   | -inf | 0.043 |
| TMSB15B         | -inf | 0.030 | VIP       | -inf | 0.044 |
| TNC             | -inf | 0.046 | VSX2      | -inf | 0.047 |
| TNFAIP8L2       | -inf | 0.019 | VTCN1     | -inf | 0.043 |
| TNFRSF11B       | -inf | 0.011 | VWA2      | -inf | 0.022 |
| TNFRSF1B        | -inf | 0.036 | VWA3A     | -inf | 0.022 |
| TNFRSF8         | -inf | 0.036 | VWA3B     | -inf | 0.027 |
| TNFSF11         | -inf | 0.037 | WBSCR17   | -inf | 0.037 |
| TNIP3           | -inf | 0.003 | WBSCR28   | -inf | 0.038 |
| TNKS2-AS1       | -inf | 0.004 | WDFY4     | -inf | 0.008 |
| TNNT3           | -inf | 0.033 | WDR17     | -inf | 0.010 |
| TOX             | -inf | 0.003 | WDR64     | -inf | 0.041 |
| TP53AIP1        | -inf | 0.021 | WDR93     | -inf | 0.010 |
| TP53TG3D        | -inf | 0.031 | WFDC10B   | -inf | 0.023 |
| TP63            | -inf | 0.040 | WFDC13    | -inf | 0.041 |
| TPRXL           | -inf | 0.012 | WFDC3     | -inf | 0.038 |
| TPSAB1          | -inf | 0.038 | WISP1     | -inf | 0.004 |
| TPSB2           | -inf | 0.035 | WNT10A    | -inf | 0.019 |
| TPTE2           | -inf | 0.025 | WNT16     | -inf | 0.024 |
| TPTE2P1         | -inf | 0.005 | WNT5A     | -inf | 0.021 |
| TPTEP1          | -inf | 0.017 | WNT5B     | -inf | 0.022 |
| TRABD2A         | -inf | 0.015 | WNT7A     | -inf | 0.020 |
| TREML3P         | -inf | 0.045 | WNT9A     | -inf | 0.011 |
| TRERF1          | -inf | 0.004 | WNT9B     | -inf | 0.006 |
| TRG-AS1         | -inf | 0.014 | XIRP2-AS1 | -inf | 0.023 |
| TRHDE           | -inf | 0.027 | XKR3      | -inf | 0.046 |
| TRHDE-AS1       | -inf | 0.024 | XKR5      | -inf | 0.020 |
| TRIM68          | -inf | 0.004 | XKR6      | -inf | 0.043 |
| TRIM72          | -inf | 0.030 | ZBBX      | -inf | 0.019 |
| TRPC4           | -inf | 0.028 | ZBED2     | -inf | 0.019 |
| TRPC5OS         | -inf | 0.037 | ZBP1      | -inf | 0.043 |
| TRPC6           | -inf | 0.021 | ZCCHC5    | -inf | 0.030 |
| TRPS1           | -inf | 0.020 | ZDHHC19   | -inf | 0.025 |
| TRPV5           | -inf | 0.032 | ZIC1      | -inf | 0.022 |
| TSGA10IP        | -inf | 0.036 | ZIM3      | -inf | 0.037 |
| TSKS            | -inf | 0.010 | ZNF208    | -inf | 0.010 |
| TSPAN18         | -inf | 0.022 | ZNF287    | -inf | 0.042 |
| TSPAN19         | -inf | 0.004 | ZNF300P1  | -inf | 0.039 |
| TTC16           | -inf | 0.018 | ZNF32-AS3 | -inf | 0.034 |
| TTC9B           | -inf | 0.044 | ZNF385D   | -inf | 0.018 |
| TTLL10          | -inf | 0.046 | ZNF462    | -inf | 0.035 |
| TTLL9           | -inf | 0.033 | ZNF467    | -inf | 0.042 |
| TULP1           | -inf | 0.034 | ZNF469    | -inf | 0.011 |
| TUSC5           | -inf | 0.032 | ZNF474    | -inf | 0.014 |
| TXLNB           | -inf | 0.039 | ZNF521    | -inf | 0.015 |
| TXNDC2          | -inf | 0.048 | ZNF532    | -inf | 0.005 |
| UBXN10          | -inf | 0.021 | ZNF541    | -inf | 0.019 |
| UCHL1           | -inf | 0.037 | ZNF560    | -inf | 0.024 |
| UG0898H09       | -inf | 0.010 | ZNF595    | -inf | 0.036 |
| UGT2B15,UGT2B17 | -inf | 0.028 | ZNF676    | -inf | 0.011 |
| UGT2B17         | -inf | 0.049 | ZNF677    | -inf | 0.046 |
| ULBP2           | -inf | 0.021 | ZNF702P   | -inf | 0.042 |
| ULK4P3          | -inf | 0.033 | ZNF717    | -inf | 0.045 |
| UNC5C           | -inf | 0.036 | ZNF718    | -inf | 0.040 |
| UNC79           | -inf | 0.038 | ZNF831    | -inf | 0.045 |
| UNC80           | -inf | 0.047 | ZNF843    | -inf | 0.033 |
| USH2A           | -inf | 0.005 | ZNF880    | -inf | 0.049 |
| USP17L10        | -inf | 0.044 | ZNRF2P2   | -inf | 0.042 |
| USP17L3         | -inf | 0.003 | ZNRF4     | -inf | 0.007 |
| USP30-AS1       | -inf | 0.013 | ZP1       | -inf | 0.010 |
| UTY             | -inf | 0.038 | ZYG11A    | -inf | 0.020 |

**Table S6** mRNA modulated in THP-1 cells exposed to 39  $\mu\text{g ml}^{-1}$  Cd as 50  $\mu\text{g ml}^{-1}$  CdS QDs (RNAseq data)

| Gene            | Fold change | p-value | Gene         | Fold change | p-value |
|-----------------|-------------|---------|--------------|-------------|---------|
| APOBEC3A_B      | -340.88     | 0.032   | CFL1P1       | -4.84       | 0.024   |
| PIR-FIGF        | -322.80     | 0.035   | IRG1         | -4.82       | 0.011   |
| ARHGAP19-SLIT1  | -310.78     | 0.010   | MT2A         | -4.81       | 0.016   |
| TMX2-CTNND1     | -228.09     | 0.032   | CFH          | -4.67       | 0.037   |
| TXNRD3NB        | -170.24     | 0.048   | MAG          | -4.66       | 0.022   |
| CKLF-CMTM1      | -163.87     | 0.038   | TNIP3        | -4.64       | 0.027   |
| TMEM189-UBE2V1  | -143.03     | 0.017   | RSAD2        | -4.63       | 0.014   |
| FXVD6-FXYD2     | -128.87     | 0.034   | SECTM1       | -4.53       | 0.038   |
| TNFRSF6B        | -102.97     | 0.041   | CCL18        | -4.50       | 0.048   |
| TMEFF1          | -97.30      | 0.017   | CCL4L2       | -4.49       | 0.025   |
| MIR671          | -89.76      | 0.019   | CXCL11       | -4.44       | 0.013   |
| GP1BB           | -88.36      | 0.019   | PI3          | -4.43       | 0.029   |
| MIA-RAB4B       | -85.66      | 0.029   | GADD45G      | -4.42       | 0.039   |
| PCDHA11         | -82.73      | 0.019   | ANKRD1       | -4.40       | 0.043   |
| TRIM6-TRIM34    | -78.87      | 0.025   | RUFY4        | -4.29       | 0.012   |
| LOC101927178    | -78.63      | 0.024   | LINC01260    | -4.27       | 0.045   |
| CORT            | -70.24      | 0.013   | HMOX1        | -4.25       | 0.042   |
| MSTO2P          | -66.81      | 0.023   | CYSLTR2      | -4.25       | 0.022   |
| STON1-GTF2A1L   | -60.34      | 0.039   | CYP39A1      | -4.19       | 0.037   |
| PCDHAC1         | -53.86      | 0.048   | ANO3         | -4.18       | 0.039   |
| TNFSF12-TNFSF13 | -50.13      | 0.030   | FAM150A      | -4.15       | 0.039   |
| PCDHA4          | -48.26      | 0.029   | MOXD1        | -4.14       | 0.041   |
| BAGE2           | -47.74      | 0.019   | ISG20        | -4.12       | 0.014   |
| PCDHA2          | -47.46      | 0.025   | IDO1         | -4.10       | 0.011   |
| PCDHA3          | -47.37      | 0.013   | FFAR2        | -4.10       | 0.035   |
| PCDHA5          | -46.35      | 0.032   | COL9A1       | -4.09       | 0.028   |
| PCDHA12         | -44.24      | 0.016   | CXCL9        | -4.08       | 0.027   |
| PCDHA13         | -44.21      | 0.046   | LOC101927780 | -4.08       | 0.042   |
| PCDHA7          | -42.58      | 0.043   | LOC100101148 | -4.05       | 0.021   |
| PCDHA8          | -40.90      | 0.012   | NEURL3       | -3.97       | 0.046   |
| SERF2-C15ORF63  | -39.36      | 0.023   | FFAR3        | -3.95       | 0.026   |
| PCDHA10         | -39.00      | 0.043   | SMTNL1       | -3.92       | 0.018   |
| PCDHA1          | -36.81      | 0.011   | CD80         | -3.89       | 0.014   |
| PCDHA6          | -36.21      | 0.036   | CXCL10       | -3.88       | 0.022   |
| RALGAPA1P       | -18.47      | 0.045   | APOBEC3A     | -3.88       | 0.022   |
| MFRP            | -18.13      | 0.022   | RFPL2        | -3.86       | 0.018   |
| KCTD14          | -17.37      | 0.015   | NKAIN1       | -3.82       | 0.037   |
| NT5C1B-RDH14    | -16.55      | 0.012   | MT1F         | -3.81       | 0.044   |
| PHOSPHO2-KLHL23 | -13.74      | 0.024   | AP1M2        | -3.81       | 0.034   |
| SNORA17         | -13.48      | 0.043   | GPR116       | -3.80       | 0.014   |
| CCDC180         | -12.55      | 0.032   | AKR1C1       | -3.79       | 0.048   |
| SPHAR           | -12.49      | 0.047   | C11orf96     | -3.78       | 0.029   |
| TBC1D3          | -10.50      | 0.024   | FLNC         | -3.76       | 0.025   |
| JMJD7-PLA2G4B   | -10.79      | 0.031   | TNFSF10      | -3.75       | 0.017   |
| RAB4B-EGLN2     | -9.89       | 0.026   | SLC8A2       | -3.75       | 0.029   |
| MT1A            | -9.83       | 0.023   | RBM11        | -3.75       | 0.046   |
| HSPA6           | -9.32       | 0.031   | SERPINB7     | -3.74       | 0.014   |
| ZNF625-ZNF20    | -9.12       | 0.040   | CACNA1I      | -3.68       | 0.043   |
| GPR75-ASB3      | -9.02       | 0.044   | DEFB1        | -3.67       | 0.031   |
| MT1M            | -8.81       | 0.044   | LOC100130301 | -3.66       | 0.013   |
| ABHD14A-ACY1    | -8.74       | 0.010   | CLDN14       | -3.66       | 0.038   |
| CORO7-PAM16     | -8.66       | 0.010   | LAG3         | -3.65       | 0.035   |
| MT1G            | -7.23       | 0.013   | COBL         | -3.63       | 0.030   |
| MIR3652         | -7.01       | 0.033   | NR4A1        | -3.63       | 0.011   |
| CRYAB           | -6.66       | 0.050   | CCL4         | -3.62       | 0.022   |
| ACTN2           | -6.49       | 0.036   | LINC01135    | -3.61       | 0.049   |
| HSPA7           | -6.01       | 0.041   | ZNF157       | -3.55       | 0.014   |
| CCL8            | -5.93       | 0.036   | EPGN         | -3.54       | 0.042   |
| NPFFR2          | -5.84       | 0.037   | TREML3P      | -3.53       | 0.045   |
| FKBP1A-SDCBP2   | -5.74       | 0.034   | CCL7         | -3.53       | 0.039   |
| MT1X            | -5.74       | 0.016   | GPR52        | -3.51       | 0.040   |
| RAD51L3-RFFL    | -5.68       | 0.049   | ARC          | -3.51       | 0.037   |
| MT1E            | -5.54       | 0.018   | NEXN         | -3.50       | 0.017   |
| CLCA3P          | -5.27       | 0.026   | IFI44L       | -3.48       | 0.017   |
| KDM6A           | -5.11       | 0.013   | LRRC4C       | -3.48       | 0.025   |
| USP30-AS1       | -5.06       | 0.025   | NCF1B        | -3.48       | 0.040   |
| IFNG-AS1        | -5.02       | 0.047   | XCR1         | -3.47       | 0.017   |
| TMEM171         | -4.96       | 0.010   | CXCR2P1      | -3.47       | 0.041   |
| COMMD3-BMI1     | -4.86       | 0.026   | SERPING1     | -3.47       | 0.021   |

|                 |       |       |              |       |       |
|-----------------|-------|-------|--------------|-------|-------|
| GBP1P1          | -3.46 | 0.042 | MROH9        | -2.93 | 0.047 |
| SPATA31E1       | -3.45 | 0.014 | CELF3        | -2.93 | 0.046 |
| TNFSF13B        | -3.45 | 0.024 | GCM1         | -2.93 | 0.044 |
| CXCL13          | -3.45 | 0.035 | HPD          | -2.92 | 0.033 |
| GBP1            | -3.45 | 0.032 | CACNG4       | -2.92 | 0.012 |
| C1S             | -3.44 | 0.014 | LINC01239    | -2.91 | 0.011 |
| NCAN            | -3.42 | 0.022 | IL13RA2      | -2.91 | 0.026 |
| TCF24           | -3.42 | 0.021 | LOC388780    | -2.90 | 0.046 |
| GBP4            | -3.42 | 0.037 | EDNRB        | -2.89 | 0.043 |
| PRSS35          | -3.41 | 0.013 | FKBP1AP1     | -2.87 | 0.024 |
| FSBP            | -3.40 | 0.021 | S100B        | -2.87 | 0.013 |
| ETV7            | -3.40 | 0.018 | OR1F1        | -2.87 | 0.024 |
| TEX19           | -3.39 | 0.014 | RASD1        | -2.86 | 0.032 |
| OTOF            | -3.38 | 0.039 | TRIM22       | -2.86 | 0.038 |
| LINC00854       | -3.37 | 0.013 | LINC00462    | -2.86 | 0.012 |
| LOC344887       | -3.37 | 0.020 | IFIT3        | -2.84 | 0.041 |
| CD274           | -3.36 | 0.016 | ZNF474       | -2.83 | 0.025 |
| PRG3            | -3.32 | 0.036 | IGF1         | -2.83 | 0.048 |
| SPTA1           | -3.30 | 0.030 | AGBL1        | -2.83 | 0.037 |
| KCNJ9           | -3.29 | 0.034 | LOC101927415 | -2.82 | 0.020 |
| AGBL2           | -3.28 | 0.031 | KBTBD12      | -2.81 | 0.041 |
| C2orf72         | -3.28 | 0.027 | MAS1         | -2.80 | 0.035 |
| MKNK1-AS1       | -3.24 | 0.017 | HYMAI        | -2.79 | 0.022 |
| SPINK6          | -3.22 | 0.022 | MESP2        | -2.79 | 0.034 |
| FAM26E          | -3.22 | 0.013 | FOXA1        | -2.78 | 0.027 |
| NGF             | -3.21 | 0.018 | TNFAIP6      | -2.78 | 0.027 |
| HESX1           | -3.21 | 0.039 | STAT4        | -2.78 | 0.031 |
| HAMP            | -3.20 | 0.019 | KTN1-AS1     | -2.74 | 0.020 |
| HPGD            | -3.19 | 0.017 | GNGT1        | -2.74 | 0.018 |
| MS4A10          | -3.18 | 0.039 | TMPRSS11F    | -2.74 | 0.040 |
| NCF1            | -3.16 | 0.011 | CD5L         | -2.74 | 0.010 |
| SRGAP2B,SRGAP2C | -3.16 | 0.032 | MIA2         | -2.73 | 0.023 |
| FOXD4L6         | -3.16 | 0.035 | PTGES        | -2.73 | 0.018 |
| KIR3DX1         | -3.15 | 0.028 | LOC728989    | -2.73 | 0.012 |
| TJP3            | -3.15 | 0.046 | GOLGA6L7P    | -2.72 | 0.045 |
| IFITM1          | -3.14 | 0.024 | IL7          | -2.72 | 0.036 |
| IFIT1           | -3.12 | 0.014 | FLJ21408     | -2.72 | 0.024 |
| HGD             | -3.12 | 0.027 | CXCL1        | -2.71 | 0.045 |
| TRAM1L1         | -3.11 | 0.040 | ATP11A-AS1   | -2.71 | 0.037 |
| MYPN            | -3.10 | 0.031 | COL28A1      | -2.71 | 0.031 |
| PXDNL           | -3.10 | 0.048 | ISG15        | -2.70 | 0.020 |
| DPYS            | -3.10 | 0.013 | PCP4L1       | -2.69 | 0.015 |
| KLK10           | -3.09 | 0.026 | FOSB         | -2.69 | 0.040 |
| SPON2           | -3.09 | 0.047 | SLC2A14      | -2.69 | 0.033 |
| CD300E          | -3.08 | 0.015 | PCDH17       | -2.69 | 0.030 |
| LINC00520       | -3.08 | 0.014 | LRRC3B       | -2.69 | 0.025 |
| CDKN1C          | -3.08 | 0.045 | BATF2        | -2.69 | 0.023 |
| H19             | -3.07 | 0.044 | CNTNAP2      | -2.69 | 0.043 |
| NCF1C           | -3.05 | 0.018 | CCDC85A      | -2.68 | 0.032 |
| IL36RN          | -3.05 | 0.046 | AKR1C2       | -2.67 | 0.043 |
| SPACA6P-AS      | -3.05 | 0.034 | TMEM75       | -2.67 | 0.049 |
| CACNG8          | -3.05 | 0.046 | LOC101929260 | -2.67 | 0.017 |
| ACSM5           | -3.05 | 0.013 | IFI27        | -2.67 | 0.045 |
| CMPK2           | -3.04 | 0.011 | CD248        | -2.67 | 0.042 |
| LINC00487       | -3.03 | 0.045 | S100A8       | -2.67 | 0.032 |
| TLR3            | -3.03 | 0.031 | ARVCF        | -2.67 | 0.033 |
| OASL            | -3.03 | 0.047 | GPR156       | -2.67 | 0.025 |
| HERC5           | -3.02 | 0.043 | GULP1        | -2.66 | 0.034 |
| IFIT2           | -3.02 | 0.013 | C20orf26     | -2.66 | 0.018 |
| GIMAP4          | -3.00 | 0.035 | SYT6         | -2.65 | 0.021 |
| CCL2            | -3.00 | 0.049 | C1QTNF1      | -2.65 | 0.045 |
| DNAH11          | -3.00 | 0.018 | PRRT2        | -2.64 | 0.041 |
| FOXP3           | -2.99 | 0.042 | IGSF6        | -2.63 | 0.033 |
| ANKRD34B        | -2.98 | 0.030 | LIPC         | -2.63 | 0.042 |
| KCTD4           | -2.98 | 0.028 | GADL1        | -2.63 | 0.047 |
| SPATS1          | -2.97 | 0.010 | CPEB2-AS1    | -2.63 | 0.031 |
| MUM1L1          | -2.95 | 0.024 | IGFBP7-AS1   | -2.62 | 0.038 |
| TSPAN10         | -2.95 | 0.034 | C12orf50     | -2.62 | 0.031 |
| MMP12           | -2.95 | 0.024 | LMTK3        | -2.62 | 0.031 |
| CPZ             | -2.95 | 0.032 | PTAFR        | -2.62 | 0.031 |
| CD38            | -2.93 | 0.012 | LOC554206    | -2.61 | 0.047 |
| KCNMB4          | -2.93 | 0.041 | GBP2         | -2.61 | 0.047 |



|              |       |       |               |       |       |
|--------------|-------|-------|---------------|-------|-------|
| NUTM1        | -2.61 | 0.016 | CXCL3         | -2.37 | 0.034 |
| ADHFE1       | -2.61 | 0.040 | EGF           | -2.36 | 0.022 |
| IL1A         | -2.60 | 0.013 | SELL          | -2.35 | 0.024 |
| TRIM16L      | -2.60 | 0.042 | LOC100505474  | -2.34 | 0.046 |
| NCKAP5       | -2.60 | 0.043 | LOC100505658  | -2.34 | 0.042 |
| LY86-AS1     | -2.60 | 0.031 | ABCB5         | -2.34 | 0.013 |
| LRP1B        | -2.60 | 0.042 | CCL1          | -2.33 | 0.043 |
| FCRL1        | -2.59 | 0.022 | CTAGE4,CTAGE8 | -2.33 | 0.015 |
| PFKFB1       | -2.59 | 0.029 | MINOS1P1      | -2.33 | 0.010 |
| KLHL1        | -2.59 | 0.036 | PMFBP1        | -2.33 | 0.033 |
| LUZP4        | -2.58 | 0.049 | IL36G         | -2.32 | 0.034 |
| CLUU10S      | -2.58 | 0.035 | MC5R          | -2.32 | 0.028 |
| SRL          | -2.58 | 0.032 | IL1R2         | -2.32 | 0.024 |
| KCNG4        | -2.57 | 0.031 | HORMAD1       | -2.32 | 0.027 |
| UGT2B7       | -2.57 | 0.012 | GBP3          | -2.32 | 0.031 |
| LOC286190    | -2.57 | 0.041 | LOC653712     | -2.32 | 0.025 |
| MAPK8IP2     | -2.56 | 0.036 | BAAT          | -2.32 | 0.036 |
| LINC00536    | -2.56 | 0.014 | PCDH8         | -2.32 | 0.017 |
| PA2G4P4      | -2.56 | 0.031 | ZNF365        | -2.31 | 0.023 |
| GBP5         | -2.55 | 0.040 | KIAA1755      | -2.31 | 0.043 |
| LINC00942    | -2.55 | 0.040 | LOC101928290  | -2.31 | 0.042 |
| KRT15        | -2.54 | 0.038 | FXD6          | -2.30 | 0.030 |
| AICDA        | -2.54 | 0.001 | IL20RA        | -2.30 | 0.037 |
| C4orf19      | -2.54 | 0.030 | PURG          | -2.29 | 0.028 |
| SMIM24       | -2.54 | 0.049 | ERICH3        | -2.28 | 0.024 |
| IFI44        | -2.54 | 0.024 | TRIM5         | -2.28 | 0.019 |
| LOC339059    | -2.53 | 0.048 | ROR2          | -2.28 | 0.037 |
| BTC          | -2.53 | 0.038 | TM4SF1        | -2.27 | 0.037 |
| IL12RB1      | -2.53 | 0.046 | DPRXP4        | -2.27 | 0.032 |
| MYO5C        | -2.53 | 0.019 | AKR1CL1       | -2.27 | 0.043 |
| MX1          | -2.51 | 0.039 | CCL3          | -2.27 | 0.040 |
| ZNF442       | -2.51 | 0.036 | LOC100272216  | -2.27 | 0.017 |
| ACY3         | -2.51 | 0.043 | RHCG          | -2.25 | 0.012 |
| PEG10        | -2.50 | 0.040 | EDN1          | -2.24 | 0.031 |
| RRAD         | -2.50 | 0.043 | TDO2          | -2.24 | 0.020 |
| PRSS57       | -2.50 | 0.031 | RXFP1         | -2.24 | 0.025 |
| CLEC12B      | -2.49 | 0.027 | IFNB1         | -2.24 | 0.031 |
| LINC00087    | -2.49 | 0.018 | MTRNR2L4      | -2.24 | 0.024 |
| CCBE1        | -2.48 | 0.046 | DLL4          | -2.23 | 0.036 |
| PRRG2        | -2.48 | 0.023 | ETV3L         | -2.23 | 0.016 |
| PTHLH        | -2.48 | 0.021 | LOC101929723  | -2.23 | 0.025 |
| TPTE2        | -2.48 | 0.026 | CHRNA1        | -2.23 | 0.048 |
| LUM          | -2.47 | 0.019 | ENPP2         | -2.23 | 0.043 |
| BAALCOS      | -2.47 | 0.040 | DDO           | -2.23 | 0.044 |
| ASAH2        | -2.45 | 0.041 | LPAR3         | -2.23 | 0.013 |
| VWCE         | -2.45 | 0.020 | PRICKLE2      | -2.22 | 0.036 |
| BSN-AS2      | -2.45 | 0.028 | IL4I1         | -2.22 | 0.042 |
| MFAP5        | -2.45 | 0.020 | SNORA61       | -2.21 | 0.020 |
| SIGLEC1      | -2.45 | 0.030 | FXD2          | -2.21 | 0.047 |
| CASP1        | -2.44 | 0.018 | DNAJB4        | -2.20 | 0.018 |
| STX19        | -2.43 | 0.042 | EGR4          | -2.20 | 0.047 |
| WDR65        | -2.43 | 0.011 | SAMD9         | -2.20 | 0.016 |
| LOC100506655 | -2.43 | 0.022 | CARD11        | -2.20 | 0.047 |
| IL27         | -2.42 | 0.012 | CXCL12        | -2.20 | 0.010 |
| HPSE         | -2.42 | 0.042 | FAM3B         | -2.20 | 0.034 |
| LOC100505942 | -2.41 | 0.045 | PROX1         | -2.20 | 0.021 |
| ESR1         | -2.41 | 0.040 | EPHA10        | -2.20 | 0.040 |
| PROM2        | -2.41 | 0.039 | FAM71E1       | -2.20 | 0.034 |
| SCUBE2       | -2.41 | 0.017 | GPR179        | -2.19 | 0.011 |
| DNALI1       | -2.41 | 0.042 | SPDYE2        | -2.19 | 0.019 |
| CCR7         | -2.40 | 0.046 | LILRB2        | -2.19 | 0.022 |
| LIPJ         | -2.40 | 0.049 | CD5           | -2.19 | 0.023 |
| UBQLNL       | -2.40 | 0.032 | LINC00659     | -2.19 | 0.033 |
| RND2         | -2.39 | 0.042 | DSP           | -2.18 | 0.014 |
| LAYN         | -2.39 | 0.042 | TRIM63        | -2.18 | 0.020 |
| CTSE         | -2.39 | 0.022 | C18orf32      | -2.18 | 0.018 |
| PVALB        | -2.39 | 0.022 | CCL3L3        | -2.18 | 0.031 |
| LOC148696    | -2.39 | 0.023 | EPSTI1        | -2.18 | 0.036 |
| RTP4         | -2.38 | 0.031 | SOD2          | -2.18 | 0.033 |
| RNF144B      | -2.38 | 0.049 | GADD45B       | -2.17 | 0.020 |
| TTLL13       | -2.37 | 0.042 | PROK2         | -2.17 | 0.026 |
| ECSCR        | -2.37 | 0.031 | ANKRD26P3     | -2.17 | 0.040 |

|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| AIM2         | -2.17 | 0.037 | LINC00260    | -2.03 | 0.040 |
| MAPK10       | -2.17 | 0.038 | GSX2         | -2.02 | 0.013 |
| EMR1         | -2.17 | 0.012 | BIRC7        | -2.02 | 0.014 |
| OR4C6        | -2.16 | 0.028 | C15orf26     | -2.02 | 0.024 |
| MT1JP        | -2.16 | 0.019 | CRTAM        | -2.02 | 0.024 |
| EXOC3L1      | -2.16 | 0.011 | ATP2C2       | -2.02 | 0.034 |
| APOBEC3H     | -2.15 | 0.040 | MEFV         | -2.02 | 0.036 |
| IL32         | -2.15 | 0.050 | LOC100289473 | -2.02 | 0.035 |
| GRM8         | -2.15 | 0.023 | SLC43A2      | -2.01 | 0.049 |
| SNAI1        | -2.15 | 0.032 | RPS16P5      | -2.01 | 0.022 |
| SSTR2        | -2.15 | 0.030 | SAMSN1       | -2.01 | 0.025 |
| SAMD9L       | -2.15 | 0.031 | CLEC10A      | -2.01 | 0.040 |
| EFCAB3       | -2.15 | 0.016 | LINC01272    | -2.01 | 0.016 |
| FAM46B       | -2.14 | 0.042 | FAM189A2     | -2.01 | 0.016 |
| OTUD7A       | -2.14 | 0.025 | FGF11        | -2.01 | 0.024 |
| GUSBP2       | -2.14 | 0.019 | SGPP2        | -2.01 | 0.048 |
| MMP13        | -2.14 | 0.016 | TRIM69       | -2.00 | 0.035 |
| CXCR3        | -2.14 | 0.002 | IFIH1        | -2.00 | 0.022 |
| CXCL2        | -2.13 | 0.018 | SGSM1        | -2.00 | 0.046 |
| LOC728024    | -2.13 | 0.021 | EPYC         | -2.00 | 0.020 |
| DNAJC5B      | -2.13 | 0.023 | TRPC1        | 2.00  | 0.021 |
| C19orf38     | -2.12 | 0.039 | TCEAL7       | 2.00  | 0.023 |
| KMO          | -2.12 | 0.028 | ADAM20       | 2.01  | 0.049 |
| DDX58        | -2.12 | 0.017 | TBL1X        | 2.01  | 0.033 |
| STAP1        | -2.11 | 0.031 | BBOX1        | 2.01  | 0.039 |
| CETN4P       | -2.11 | 0.032 | SPC24        | 2.01  | 0.035 |
| IFITM3       | -2.11 | 0.038 | SDK2         | 2.01  | 0.042 |
| PERM1        | -2.11 | 0.022 | ESAM         | 2.01  | 0.017 |
| HSH2D        | -2.10 | 0.013 | C2orf66      | 2.01  | 0.037 |
| CRB1         | -2.09 | 0.017 | PHYHIP       | 2.02  | 0.039 |
| TNFRSF8      | -2.09 | 0.032 | HLA-C        | 2.02  | 0.023 |
| IFI35        | -2.09 | 0.046 | LINC01091    | 2.03  | 0.044 |
| LDHAL6B      | -2.09 | 0.016 | C14orf132    | 2.04  | 0.024 |
| TMEM132B     | -2.09 | 0.033 | RDM1         | 2.04  | 0.050 |
| ESRRB        | -2.08 | 0.013 | LOC102724550 | 2.05  | 0.009 |
| MMP25        | -2.08 | 0.015 | TOX2         | 2.05  | 0.013 |
| ANKRD30B     | -2.08 | 0.019 | IL12A        | 2.05  | 0.035 |
| MTHFD2L      | -2.08 | 0.040 | MKI67        | 2.05  | 0.039 |
| PCDH20       | -2.08 | 0.049 | SPTY2D1-AS1  | 2.05  | 0.026 |
| ANGPT2       | -2.08 | 0.024 | COLGALT2     | 2.05  | 0.016 |
| TVP23A       | -2.08 | 0.014 | AURKB        | 2.06  | 0.009 |
| SCN3B        | -2.08 | 0.029 | PIF1         | 2.07  | 0.038 |
| TMEM229A     | -2.08 | 0.014 | CASC15       | 2.07  | 0.023 |
| CDC42EP2     | -2.08 | 0.028 | LOC100507424 | 2.07  | 0.041 |
| DCN          | -2.07 | 0.037 | KIF23        | 2.07  | 0.035 |
| FLRT3        | -2.07 | 0.039 | CKAP2L       | 2.08  | 0.047 |
| APOL1        | -2.07 | 0.037 | ARPP21       | 2.09  | 0.019 |
| UNC80        | -2.07 | 0.027 | UTS2B        | 2.09  | 0.044 |
| C1R          | -2.07 | 0.018 | LAX1         | 2.09  | 0.025 |
| LOC644936    | -2.07 | 0.049 | ZNF536       | 2.09  | 0.040 |
| ZNF774       | -2.06 | 0.042 | SLC5A2       | 2.09  | 0.032 |
| RND1         | -2.06 | 0.012 | TAF1A-AS1    | 2.09  | 0.030 |
| LRRC15       | -2.06 | 0.042 | KIF4A        | 2.10  | 0.040 |
| LOC101928943 | -2.06 | 0.034 | NOXO1        | 2.10  | 0.042 |
| LINC00173    | -2.06 | 0.035 | LINC01191    | 2.10  | 0.016 |
| OR52K1       | -2.06 | 0.043 | AMICA1       | 2.10  | 0.024 |
| GPBAR1       | -2.05 | 0.046 | PABPC1P2     | 2.11  | 0.040 |
| WDR96        | -2.05 | 0.031 | SCARNA2      | 2.12  | 0.046 |
| ANKRD30BP3   | -2.05 | 0.034 | TRIM45       | 2.13  | 0.032 |
| LOC102477328 | -2.05 | 0.036 | GRB10        | 2.13  | 0.036 |
| PARD6G-AS1   | -2.05 | 0.025 | NOS3         | 2.13  | 0.028 |
| IL36B        | -2.05 | 0.001 | SRRM3        | 2.13  | 0.025 |
| PCDH9        | -2.04 | 0.010 | ITPR1-AS1    | 2.13  | 0.042 |
| SBSN         | -2.04 | 0.003 | LRGUK        | 2.13  | 0.037 |
| TIFAB        | -2.04 | 0.033 | VLDLR        | 2.14  | 0.019 |
| KCNK7        | -2.03 | 0.048 | TROAP        | 2.14  | 0.028 |
| MX2          | -2.03 | 0.040 | SLC44A5      | 2.15  | 0.015 |
| AP4B1-AS1    | -2.03 | 0.046 | GNGT2        | 2.15  | 0.046 |
| LOC400927    | -2.03 | 0.039 | NDC80        | 2.15  | 0.032 |
| GPR155       | -2.03 | 0.031 | DNAJB13      | 2.15  | 0.042 |
| MYLK3        | -2.03 | 0.035 | SYTL1        | 2.15  | 0.039 |
| TGM3         | -2.03 | 0.041 | ANK3         | 2.15  | 0.024 |

|              |      |       |                                |      |       |
|--------------|------|-------|--------------------------------|------|-------|
| GPR83        | 2.16 | 0.031 | FBLL1                          | 2.47 | 0.015 |
| KIF20A       | 2.16 | 0.042 | OXTR                           | 2.48 | 0.042 |
| FANCD2OS     | 2.16 | 0.043 | IGSF9                          | 2.48 | 0.013 |
| TSLP         | 2.16 | 0.034 | CACNA1D                        | 2.48 | 0.035 |
| F2R          | 2.17 | 0.028 | ATP11AUN                       | 2.48 | 0.009 |
| MGC39584     | 2.17 | 0.043 | TLE2                           | 2.48 | 0.049 |
| NGEF         | 2.17 | 0.024 | NUP62CL                        | 2.49 | 0.031 |
| MND1         | 2.17 | 0.022 | GAPDHS                         | 2.50 | 0.039 |
| KRT80        | 2.18 | 0.045 | MYO22                          | 2.50 | 0.038 |
| C10orf131    | 2.18 | 0.033 | IGFBP5                         | 2.55 | 0.035 |
| FAM53A       | 2.18 | 0.030 | NOVA2                          | 2.55 | 0.030 |
| SORL1        | 2.19 | 0.019 | DIP2C                          | 2.55 | 0.011 |
| LOC102724467 | 2.19 | 0.027 | IMPG2                          | 2.56 | 0.049 |
| DLX2         | 2.19 | 0.039 | KLF4                           | 2.57 | 0.015 |
| LOC100506207 | 2.19 | 0.043 | FLRT1                          | 2.58 | 0.041 |
| NLRP6        | 2.19 | 0.025 | HPCAL4                         | 2.58 | 0.014 |
| CENPM        | 2.20 | 0.048 | ASNS                           | 2.59 | 0.017 |
| DLGAP5       | 2.20 | 0.044 | SMPDL3B                        | 2.59 | 0.013 |
| TNFRSF13C    | 2.20 | 0.031 | CDCA3                          | 2.60 | 0.038 |
| NT5M         | 2.22 | 0.032 | LOC100505715                   | 2.61 | 0.011 |
| GABRA1       | 2.22 | 0.040 | CENPA                          | 2.62 | 0.021 |
| SLC9A2       | 2.23 | 0.048 | ESRP1                          | 2.63 | 0.025 |
| FLJ41200     | 2.23 | 0.045 | PPP1R9A                        | 2.65 | 0.041 |
| RNF152       | 2.23 | 0.042 | CACNA2D2                       | 2.65 | 0.035 |
| TNC          | 2.24 | 0.044 | TRIB3                          | 2.65 | 0.039 |
| LOC100270804 | 2.24 | 0.024 | HIST1H2AE                      | 2.65 | 0.022 |
| ULBP1        | 2.25 | 0.028 | FAM64A                         | 2.69 | 0.028 |
| LINC00266-1  | 2.25 | 0.012 | LOC152225                      | 2.71 | 0.048 |
| PBK          | 2.26 | 0.042 | MINOS1-NBL1                    | 2.71 | 0.033 |
| HOXA2        | 2.26 | 0.027 | STOX1                          | 2.71 | 0.049 |
| CDC25C       | 2.26 | 0.028 | ISLR2                          | 2.72 | 0.042 |
| SLC7A5       | 2.26 | 0.014 | HMMR-AS1                       | 2.74 | 0.030 |
| CIT          | 2.26 | 0.025 | IGSF10                         | 2.74 | 0.041 |
| EN1          | 2.26 | 0.019 | SMKR1                          | 2.76 | 0.017 |
| GCOM1        | 2.26 | 0.045 | KCNIP1                         | 2.77 | 0.027 |
| ABCC11       | 2.26 | 0.034 | CATSPERB                       | 2.78 | 0.031 |
| HEY1         | 2.27 | 0.013 | LOC101060524                   | 2.78 | 0.032 |
| SCARA3       | 2.27 | 0.049 | PRDM13                         | 2.78 | 0.030 |
| SLC4A1       | 2.27 | 0.030 | HIST1H2BH                      | 2.80 | 0.011 |
| LPO          | 2.27 | 0.025 | RGMB-AS1                       | 2.81 | 0.046 |
| BTNL9        | 2.28 | 0.042 | LOC643802                      | 2.81 | 0.027 |
| FBXO43       | 2.28 | 0.034 | S100P                          | 2.81 | 0.043 |
| MPP7         | 2.28 | 0.012 | RNASEK-C17orf49                | 2.83 | 0.036 |
| HIST1H2BO    | 2.30 | 0.019 | CHAD                           | 2.84 | 0.008 |
| MASP1        | 2.31 | 0.039 | TBC1D3,TBC1D3C,TBC1D3F,TBC1D3H | 2.86 | 0.032 |
| LONRF2       | 2.32 | 0.026 | ST6GALNAC3                     | 2.88 | 0.016 |
| DEPDC1       | 2.33 | 0.041 | HIST1H2AH                      | 2.88 | 0.043 |
| BIRC5        | 2.34 | 0.020 | MCIDAS                         | 2.90 | 0.045 |
| TMEM63C      | 2.34 | 0.021 | C15orf56                       | 2.90 | 0.042 |
| ENHO         | 2.34 | 0.014 | C20orf197                      | 2.91 | 0.019 |
| TREML2       | 2.35 | 0.047 | CAMP                           | 2.91 | 0.028 |
| SKA1         | 2.35 | 0.038 | C1QTNF9B-AS1                   | 2.93 | 0.046 |
| ADAM19       | 2.37 | 0.040 | COBLL1                         | 2.96 | 0.031 |
| TMEM130      | 2.38 | 0.041 | SCART1                         | 2.97 | 0.014 |
| PLK1         | 2.38 | 0.044 | LOC101929099                   | 2.98 | 0.004 |
| STC2         | 2.38 | 0.012 | DRD5                           | 3.00 | 0.044 |
| RNF148       | 2.38 | 0.035 | TMSB15A                        | 3.00 | 0.018 |
| RIBC1        | 2.38 | 0.026 | UBL4B                          | 3.03 | 0.045 |
| GTSE1        | 2.38 | 0.039 | SLC6A9                         | 3.04 | 0.031 |
| DUOX1        | 2.38 | 0.034 | NLRP12                         | 3.06 | 0.031 |
| HIST1H2AM    | 2.39 | 0.049 | ZBED3                          | 3.08 | 0.040 |
| PSAT1        | 2.39 | 0.047 | HOXB9                          | 3.11 | 0.046 |
| FLJ46906     | 2.39 | 0.038 | CH25H                          | 3.14 | 0.047 |
| PHYHD1       | 2.39 | 0.039 | TMEM61                         | 3.14 | 0.037 |
| EVA1C        | 2.40 | 0.015 | LOC101927100                   | 3.15 | 0.011 |
| TLR7         | 2.41 | 0.015 | RGAG1                          | 3.22 | 0.026 |
| ST8SIA1      | 2.42 | 0.028 | MAEL                           | 3.26 | 0.029 |
| PTPRN        | 2.43 | 0.029 | NT5C1A                         | 3.32 | 0.004 |
| POU2F3       | 2.43 | 0.048 | RGS7BP                         | 3.33 | 0.014 |
| LIPE-AS1     | 2.45 | 0.028 | TIGIT                          | 3.39 | 0.019 |
| CRYGS        | 2.46 | 0.034 | VLDLR-AS1                      | 3.46 | 0.015 |
| CD101        | 2.46 | 0.019 | GABRD                          | 3.57 | 0.029 |

|                     |        |       |              |     |       |
|---------------------|--------|-------|--------------|-----|-------|
| S1PR1               | 3.64   | 0.028 | BAALC-AS1    | inf | 0.039 |
| SPECC1L-ADORA2A     | 3.75   | 0.018 | BAGE,BAGE5   | inf | 0.021 |
| OR7E47P             | 3.78   | 0.031 | BAGE4        | inf | 0.024 |
| CHRNA9              | 3.87   | 0.034 | BAGE5        | inf | 0.015 |
| ECM2                | 3.88   | 0.031 | BDKRB1       | inf | 0.029 |
| ALPK2               | 3.95   | 0.049 | BEND5        | inf | 0.034 |
| FAM167A             | 3.97   | 0.045 | BMP3         | inf | 0.030 |
| CLDN10              | 4.05   | 0.036 | BMS1P6       | inf | 0.019 |
| NHS                 | 4.05   | 0.050 | BMX          | inf | 0.043 |
| TEX11               | 4.06   | 0.023 | BRWD1-AS1    | inf | 0.040 |
| CDRT4               | 4.13   | 0.027 | BTBD16       | inf | 0.013 |
| SCN4A               | 4.15   | 0.011 | C10orf111    | inf | 0.039 |
| LAMA4               | 4.33   | 0.014 | C11orf86     | inf | 0.022 |
| INMT-FAM188B        | 4.96   | 0.027 | C11orf91     | inf | 0.024 |
| INS-IGF2            | 5.70   | 0.022 | C12orf77     | inf | 0.047 |
| RPL21               | 8.78   | 0.042 | C16orf89     | inf | 0.019 |
| TNNI3K              | 9.64   | 0.048 | C1orf110     | inf | 0.016 |
| ZFP91-CNTF          | 10.61  | 0.022 | C1orf61      | inf | 0.043 |
| NEDD8-MDP1          | 10.37  | 0.047 | C1QL1        | inf | 0.019 |
| MRPL42P5            | 13.87  | 0.027 | C1QL2        | inf | 0.036 |
| TMEM256-PLSCR3      | 13.90  | 0.027 | C1QTNF2      | inf | 0.004 |
| CCDC169-SOHLH2      | 13.95  | 0.035 | C1QTNF4      | inf | 0.027 |
| SCARNA13            | 14.07  | 0.033 | C20orf173    | inf | 0.037 |
| ZASP                | 14.12  | 0.036 | C22orf15     | inf | 0.045 |
| KIAA0408            | 14.92  | 0.041 | C2CD4D       | inf | 0.035 |
| CNTNAP3P2           | 17.56  | 0.015 | C2orf50      | inf | 0.033 |
| CHKB-CPT1B          | 18.17  | 0.041 | C3orf22      | inf | 0.029 |
| IPO11-LRRC70,LRRC70 | 28.50  | 0.036 | C3orf43      | inf | 0.043 |
| GJA9                | 46.58  | 0.011 | C6orf118     | inf | 0.008 |
| BGLAP               | 52.34  | 0.046 | C6orf195     | inf | 0.040 |
| PGBD3               | 53.16  | 0.019 | C8orf4       | inf | 0.039 |
| FAM24B-CUZD1        | 67.05  | 0.021 | C8orf48      | inf | 0.015 |
| MROH7               | 82.76  | 0.031 | C9orf135-AS1 | inf | 0.036 |
| HOXC4               | 126.83 | 0.050 | C9orf171     | inf | 0.021 |
| MIR1306             | 276.93 | 0.025 | CA10         | inf | 0.046 |
| PRR5-ARHGAP8        | 280.48 | 0.032 | CABP7        | inf | 0.048 |
| IQCJ                | 874.93 | 0.042 | CALB1        | inf | 0.035 |
| AADACL2-AS1         | inf    | 0.026 | CALCB        | inf | 0.029 |
| ABHD1               | inf    | 0.011 | CAPN9        | inf | 0.019 |
| ACCSL               | inf    | 0.015 | CBLN1        | inf | 0.031 |
| ACMSD               | inf    | 0.001 | CBLN2        | inf | 0.012 |
| ACTBL2              | inf    | 0.040 | CCDC152      | inf | 0.032 |
| ADAM33              | inf    | 0.026 | CCDC37       | inf | 0.023 |
| ADAMTS20            | inf    | 0.024 | CCDC79       | inf | 0.026 |
| ADH4                | inf    | 0.013 | CCKBR        | inf | 0.028 |
| ADIPOQ-AS1          | inf    | 0.049 | CD3G         | inf | 0.027 |
| AFAP1L2             | inf    | 0.021 | CDC14C       | inf | 0.015 |
| AGMO                | inf    | 0.049 | CDC20B       | inf | 0.023 |
| ALMS1P              | inf    | 0.022 | CDH20        | inf | 0.033 |
| ALOX12B             | inf    | 0.023 | CDKL4        | inf | 0.043 |
| ALOX15P1            | inf    | 0.040 | CDRT15P1     | inf | 0.030 |
| AMELX               | inf    | 0.028 | CDX1         | inf | 0.047 |
| AMPD1               | inf    | 0.021 | CEP83-AS1    | inf | 0.015 |
| ANAPC1P1            | inf    | 0.015 | CERS3        | inf | 0.018 |
| ANGPT4              | inf    | 0.036 | CFI          | inf | 0.023 |
| ANKRD20A4           | inf    | 0.025 | CFTR         | inf | 0.035 |
| ANKRD62             | inf    | 0.036 | CHRM2        | inf | 0.044 |
| ANKRD65             | inf    | 0.027 | CHRNA6       | inf | 0.014 |
| ANXA8               | inf    | 0.026 | CHRNA6       | inf | 0.023 |
| APOBEC4             | inf    | 0.023 | CHRNA6       | inf | 0.020 |
| APOF                | inf    | 0.037 | CHRNA6       | inf | 0.039 |
| AQP5                | inf    | 0.014 | CLDN10-AS1   | inf | 0.017 |
| AQP7                | inf    | 0.042 | CLDN10-AS1   | inf | 0.011 |
| ARMC3               | inf    | 0.012 | CLDN10-AS1   | inf | 0.023 |
| ARNTL2-AS1          | inf    | 0.014 | CLDN10-AS1   | inf | 0.010 |
| ARRDC5              | inf    | 0.018 | CLDN10-AS1   | inf | 0.028 |
| ASTN1               | inf    | 0.017 | CLDN10-AS1   | inf | 0.035 |
| ATP12A              | inf    | 0.021 | CLDN10-AS1   | inf | 0.047 |
| ATP4B               | inf    | 0.050 | CLDN10-AS1   | inf | 0.028 |
| AUTS2               | inf    | 0.045 | CLDN10-AS1   | inf | 0.016 |
| AVPR1B              | inf    | 0.025 | CLDN10-AS1   | inf | 0.020 |
| B3GALT5             | inf    | 0.047 | CTB-178M22.2 | inf | 0.027 |

|              |     |       |                   |     |       |
|--------------|-----|-------|-------------------|-----|-------|
| CTRB2        | inf | 0.035 | GNG13             | inf | 0.028 |
| CXorf22      | inf | 0.017 | GOLGA6B           | inf | 0.032 |
| CXorf28      | inf | 0.039 | GOLGA8CP          | inf | 0.040 |
| CYP3A5       | inf | 0.010 | GOLGA8DP          | inf | 0.043 |
| CYP4F22      | inf | 0.012 | GP9               | inf | 0.012 |
| CYT11        | inf | 0.027 | GPA33             | inf | 0.049 |
| DGKK         | inf | 0.026 | GPR150            | inf | 0.015 |
| DIP2A-IT1    | inf | 0.035 | GPR152            | inf | 0.032 |
| DKKL1        | inf | 0.027 | GRB7              | inf | 0.034 |
| DLG3-AS1     | inf | 0.020 | GRIA1             | inf | 0.031 |
| DMBT1        | inf | 0.013 | GRIN1             | inf | 0.026 |
| DRICH1       | inf | 0.042 | GRIN2C            | inf | 0.019 |
| DYNAP        | inf | 0.010 | GRM3              | inf | 0.011 |
| EFCAB9       | inf | 0.025 | GRM5              | inf | 0.029 |
| EFHD1        | inf | 0.034 | GRM6              | inf | 0.019 |
| EFTUD1P1     | inf | 0.013 | HABP2             | inf | 0.048 |
| EGFLAM-AS4   | inf | 0.011 | HAND1             | inf | 0.018 |
| EGFR-AS1     | inf | 0.026 | HBQ1              | inf | 0.027 |
| ELF5         | inf | 0.029 | HCN1              | inf | 0.034 |
| ELMO1-AS1    | inf | 0.042 | HEPACAM           | inf | 0.012 |
| ENPP6        | inf | 0.017 | HIST1H2AL         | inf | 0.000 |
| ENPP7        | inf | 0.043 | HIST1H2BB         | inf | 0.022 |
| ENTPD2       | inf | 0.037 | HIST1H3A          | inf | 0.039 |
| EPB41L4A-AS2 | inf | 0.020 | HIST1H3B          | inf | 0.012 |
| EPHA4        | inf | 0.011 | HIST1H3G          | inf | 0.010 |
| EPN2-AS1     | inf | 0.030 | HLA-DQA1          | inf | 0.048 |
| EPO          | inf | 0.042 | HMGB3P1           | inf | 0.033 |
| ESR2         | inf | 0.034 | HMP19             | inf | 0.023 |
| EVX1         | inf | 0.041 | HOXC8             | inf | 0.047 |
| F2RL1        | inf | 0.043 | HOXC9             | inf | 0.027 |
| FAM109B      | inf | 0.050 | HSF5              | inf | 0.044 |
| FAM153C      | inf | 0.043 | HSPB6             | inf | 0.041 |
| FAM159B      | inf | 0.037 | HTRA4             | inf | 0.034 |
| FAM169B      | inf | 0.048 | IGFL4             | inf | 0.026 |
| FAM229A      | inf | 0.022 | IGSF11            | inf | 0.037 |
| FAM35BP      | inf | 0.040 | IL12A-AS1         | inf | 0.039 |
| FAM47C       | inf | 0.040 | IL22RA2           | inf | 0.027 |
| FAM86B2      | inf | 0.018 | IL26              | inf | 0.011 |
| FAM90A25P    | inf | 0.019 | ISPD-AS1          | inf | 0.013 |
| FAM9C        | inf | 0.025 | ITIH1             | inf | 0.022 |
| FBP2         | inf | 0.045 | IZUMO1            | inf | 0.041 |
| FER1L6-AS2   | inf | 0.034 | JARID2-AS1        | inf | 0.014 |
| FGF12        | inf | 0.046 | KBTBD13           | inf | 0.011 |
| FGF14        | inf | 0.033 | KCNA4             | inf | 0.038 |
| FGF23        | inf | 0.020 | KCNH5             | inf | 0.037 |
| FGFR2        | inf | 0.016 | KCNQ2             | inf | 0.032 |
| FIBIN        | inf | 0.017 | KCNV1             | inf | 0.022 |
| FLJ12825     | inf | 0.015 | KISS1R            | inf | 0.035 |
| FLJ22447     | inf | 0.043 | KLF14             | inf | 0.047 |
| FLJ33360     | inf | 0.023 | KLHDC7A           | inf | 0.019 |
| FLJ43879     | inf | 0.017 | KLK14             | inf | 0.026 |
| FMN2         | inf | 0.040 | KLK7              | inf | 0.035 |
| FMR1-AS1     | inf | 0.046 | KLRC1             | inf | 0.021 |
| FRMD5        | inf | 0.049 | KLRC2             | inf | 0.036 |
| FSTL5        | inf | 0.015 | KLRC3             | inf | 0.028 |
| FXVD3        | inf | 0.046 | KLRC4             | inf | 0.016 |
| G6PC2        | inf | 0.042 | KLRC4-KLRK1,KLRK1 | inf | 0.026 |
| GABRA3       | inf | 0.015 | KLRK1             | inf | 0.046 |
| GALR2        | inf | 0.030 | KNDC1             | inf | 0.036 |
| GATA6-AS1    | inf | 0.028 | KRT1              | inf | 0.046 |
| GDAP1L1      | inf | 0.030 | KRT16P3           | inf | 0.044 |
| GDF3         | inf | 0.035 | KRT18P55          | inf | 0.018 |
| GFI1B        | inf | 0.047 | KRT31             | inf | 0.014 |
| GGTA1P       | inf | 0.032 | KRT36             | inf | 0.038 |
| GJA4         | inf | 0.033 | KRT76             | inf | 0.035 |
| GJB7         | inf | 0.027 | KRT86             | inf | 0.020 |
| GLI2         | inf | 0.027 | KRTAP5-7          | inf | 0.012 |
| GLRA1        | inf | 0.018 | LCK               | inf | 0.038 |
| GLRA2        | inf | 0.006 | LCN10             | inf | 0.044 |
| GLUD1P7      | inf | 0.047 | LCN2              | inf | 0.042 |
| GNAO1        | inf | 0.038 | LEFTY1            | inf | 0.036 |
| GNB3         | inf | 0.041 | LEMD1-AS1         | inf | 0.022 |

|                 |     |       |              |     |       |
|-----------------|-----|-------|--------------|-----|-------|
| LEP             | inf | 0.046 | LOC101927229 | inf | 0.030 |
| LGALS4          | inf | 0.024 | LOC101927237 | inf | 0.013 |
| LGSN            | inf | 0.032 | LOC101927267 | inf | 0.042 |
| LINC00032       | inf | 0.043 | LOC101927284 | inf | 0.028 |
| LINC00163       | inf | 0.043 | LOC101927286 | inf | 0.048 |
| LINC00239       | inf | 0.020 | LOC101927322 | inf | 0.019 |
| LINC00240       | inf | 0.031 | LOC101927348 | inf | 0.030 |
| LINC00264       | inf | 0.022 | LOC101927411 | inf | 0.048 |
| LINC00488       | inf | 0.028 | LOC101927446 | inf | 0.011 |
| LINC00518       | inf | 0.030 | LOC101927587 | inf | 0.033 |
| LINC00581       | inf | 0.010 | LOC101927651 | inf | 0.017 |
| LINC00592       | inf | 0.048 | LOC101927817 | inf | 0.018 |
| LINC00595       | inf | 0.027 | LOC101927839 | inf | 0.049 |
| LINC00612       | inf | 0.021 | LOC101927921 | inf | 0.013 |
| LINC00629       | inf | 0.034 | LOC101927987 | inf | 0.035 |
| LINC00632       | inf | 0.046 | LOC101928043 | inf | 0.019 |
| LINC00634       | inf | 0.029 | LOC101928100 | inf | 0.045 |
| LINC00637       | inf | 0.031 | LOC101928107 | inf | 0.002 |
| LINC00669       | inf | 0.021 | LOC101928335 | inf | 0.012 |
| LINC00671       | inf | 0.015 | LOC101928516 | inf | 0.038 |
| LINC00700       | inf | 0.019 | LOC101928535 | inf | 0.043 |
| LINC00703       | inf | 0.041 | LOC101928580 | inf | 0.016 |
| LINC00892       | inf | 0.011 | LOC101928694 | inf | 0.028 |
| LINC00911       | inf | 0.020 | LOC101928738 | inf | 0.027 |
| LINC00970       | inf | 0.043 | LOC101929064 | inf | 0.032 |
| LINC01030       | inf | 0.049 | LOC101929144 | inf | 0.043 |
| LINC01106       | inf | 0.025 | LOC101929225 | inf | 0.038 |
| LINC01122       | inf | 0.011 | LOC101929319 | inf | 0.018 |
| LINC01124       | inf | 0.009 | LOC101929395 | inf | 0.039 |
| LINC01152       | inf | 0.028 | LOC101929412 | inf | 0.043 |
| LINC01222       | inf | 0.032 | LOC101929439 | inf | 0.014 |
| LINC01277       | inf | 0.018 | LOC101929524 | inf | 0.030 |
| LINC01335       | inf | 0.049 | LOC101929607 | inf | 0.035 |
| LINC01341       | inf | 0.031 | LOC101929645 | inf | 0.026 |
| LIPF            | inf | 0.043 | LOC101929690 | inf | 0.035 |
| LIP1            | inf | 0.026 | LOC102546226 | inf | 0.025 |
| LIPN            | inf | 0.017 | LOC102723426 | inf | 0.013 |
| LIX1            | inf | 0.020 | LOC102723505 | inf | 0.016 |
| LL22NC01-81G9.3 | inf | 0.042 | LOC102723513 | inf | 0.029 |
| LMO3            | inf | 0.036 | LOC102723927 | inf | 0.014 |
| LNXL-AS2        | inf | 0.046 | LOC102724508 | inf | 0.034 |
| LOC100128006    | inf | 0.017 | LOC113230    | inf | 0.006 |
| LOC100128682    | inf | 0.019 | LOC253044    | inf | 0.036 |
| LOC100128885    | inf | 0.001 | LOC283710    | inf | 0.024 |
| LOC100129027    | inf | 0.044 | LOC285629    | inf | 0.021 |
| LOC100129203    | inf | 0.011 | LOC285847    | inf | 0.005 |
| LOC100130357    | inf | 0.017 | LOC339240    | inf | 0.042 |
| LOC100130539    | inf | 0.034 | LOC340357    | inf | 0.018 |
| LOC100132354    | inf | 0.043 | LOC392232    | inf | 0.046 |
| LOC100132781    | inf | 0.016 | LOC401177    | inf | 0.030 |
| LOC100144595    | inf | 0.019 | LOC642929    | inf | 0.002 |
| LOC100287632    | inf | 0.032 | LOC729159    | inf | 0.013 |
| LOC100505478    | inf | 0.029 | LOC729609    | inf | 0.025 |
| LOC100505912    | inf | 0.034 | LOC730159    | inf | 0.027 |
| LOC100506082    | inf | 0.030 | LOC730668    | inf | 0.040 |
| LOC100506457    | inf | 0.046 | LPA          | inf | 0.020 |
| LOC100506497    | inf | 0.037 | LRP4-AS1     | inf | 0.025 |
| LOC100506801    | inf | 0.045 | LRRC2-AS1    | inf | 0.016 |
| LOC100506895    | inf | 0.041 | LRRC55       | inf | 0.015 |
| LOC100507391    | inf | 0.028 | LRRC70       | inf | 0.043 |
| LOC100996266    | inf | 0.034 | LUZP2        | inf | 0.034 |
| LOC100996324    | inf | 0.012 | MAGEA10      | inf | 0.005 |
| LOC100996654    | inf | 0.037 | MAGEA8       | inf | 0.049 |
| LOC101926896    | inf | 0.037 | MAGEB3       | inf | 0.045 |
| LOC101926928    | inf | 0.036 | MARCH10      | inf | 0.014 |
| LOC101926944    | inf | 0.041 | MATN4        | inf | 0.049 |
| LOC101926955    | inf | 0.049 | METTL21EP    | inf | 0.039 |
| LOC101927131    | inf | 0.031 | METTL24      | inf | 0.015 |
| LOC101927153    | inf | 0.013 | MGARP        | inf | 0.045 |
| LOC101927190    | inf | 0.016 | MGC16025     | inf | 0.045 |
| LOC101927196    | inf | 0.019 | MIR1181      | inf | 0.035 |
| LOC101927217    | inf | 0.047 | MIR143HG     | inf | 0.018 |

|           |     |       |                 |     |       |
|-----------|-----|-------|-----------------|-----|-------|
| MIR25     | inf | 0.040 | PROM1           | inf | 0.011 |
| MIR3614   | inf | 0.010 | PRORY           | inf | 0.038 |
| MIR3662   | inf | 0.044 | PRPH            | inf | 0.012 |
| MIR4687   | inf | 0.046 | PRR26           | inf | 0.027 |
| MIR4784   | inf | 0.038 | PRRC2A          | inf | 0.023 |
| MIR600    | inf | 0.049 | PRSS50          | inf | 0.011 |
| MIR6080   | inf | 0.020 | PRSS8           | inf | 0.044 |
| MIR641    | inf | 0.026 | PSPN            | inf | 0.029 |
| MIR6739   | inf | 0.017 | PTH1R           | inf | 0.034 |
| MIR765    | inf | 0.045 | PTPN5           | inf | 0.040 |
| MIR8075   | inf | 0.041 | RAB25           | inf | 0.023 |
| MIR922    | inf | 0.046 | RASSF10         | inf | 0.026 |
| MMD2      | inf | 0.040 | RASSF6          | inf | 0.047 |
| MPZL2     | inf | 0.018 | REN             | inf | 0.033 |
| MROH5     | inf | 0.012 | RGPD4-AS1       | inf | 0.017 |
| MS4A8     | inf | 0.039 | RGS7            | inf | 0.011 |
| MSH4      | inf | 0.026 | RHO             | inf | 0.013 |
| MSLN      | inf | 0.011 | RLBP1           | inf | 0.023 |
| MTNR1A    | inf | 0.040 | RNF219-AS1      | inf | 0.048 |
| MTRNR2L10 | inf | 0.018 | RNU11           | inf | 0.017 |
| MYL4      | inf | 0.019 | RSPH1           | inf | 0.020 |
| NACAD     | inf | 0.023 | RXFP2           | inf | 0.025 |
| NALCN-AS1 | inf | 0.038 | SCARNA17,SNHG22 | inf | 0.033 |
| NAP1L6    | inf | 0.029 | SCGB1B2P        | inf | 0.038 |
| NDST4     | inf | 0.013 | SCGB2B2         | inf | 0.034 |
| NEUROG2   | inf | 0.023 | SCN2A           | inf | 0.011 |
| NFASC     | inf | 0.027 | SCN3A           | inf | 0.022 |
| NFIB      | inf | 0.044 | SCT             | inf | 0.041 |
| NKAIN2    | inf | 0.019 | SDR9C7          | inf | 0.032 |
| NLGN1     | inf | 0.041 | SEMA5B          | inf | 0.033 |
| NNMT      | inf | 0.027 | SERF1A,SERF1B   | inf | 0.027 |
| NPY5R     | inf | 0.029 | SERF1B          | inf | 0.043 |
| NPY6R     | inf | 0.038 | SERPINA12       | inf | 0.030 |
| NR5A1     | inf | 0.016 | SERPINA2        | inf | 0.016 |
| NTN4      | inf | 0.017 | SERPINA4        | inf | 0.019 |
| NUCB1-AS1 | inf | 0.040 | SH3BP4          | inf | 0.023 |
| NUTM2F    | inf | 0.048 | SH3RF3-AS1      | inf | 0.037 |
| NWD2      | inf | 0.037 | SHANK2-AS1      | inf | 0.014 |
| NXNL2     | inf | 0.019 | SLC16A12        | inf | 0.029 |
| NXPE2     | inf | 0.044 | SLC24A5         | inf | 0.046 |
| NXPH1     | inf | 0.025 | SLC39A5         | inf | 0.033 |
| NXPH2     | inf | 0.021 | SLC47A2         | inf | 0.043 |
| OGN       | inf | 0.034 | SLC5A5          | inf | 0.010 |
| OMD       | inf | 0.009 | SMAD1-AS2       | inf | 0.039 |
| OR10A4    | inf | 0.034 | SNORA1          | inf | 0.014 |
| OR10V1    | inf | 0.035 | SNORA13         | inf | 0.024 |
| OR1F2P    | inf | 0.033 | SNORA19         | inf | 0.032 |
| OR2B2     | inf | 0.035 | SNORA20         | inf | 0.020 |
| OR6K6     | inf | 0.014 | SNORA22         | inf | 0.044 |
| OR8S1     | inf | 0.016 | SNORA24         | inf | 0.042 |
| P2RY14    | inf | 0.035 | SNORA31         | inf | 0.044 |
| PANDAR    | inf | 0.041 | SNORA52         | inf | 0.031 |
| PAX1      | inf | 0.042 | SNORA56         | inf | 0.038 |
| PBX2      | inf | 0.037 | SNORA5B         | inf | 0.022 |
| PCAT6     | inf | 0.010 | SNORA72         | inf | 0.015 |
| PCDH19    | inf | 0.004 | SNORA74A        | inf | 0.048 |
| PCDHGB2   | inf | 0.013 | SNORD100        | inf | 0.011 |
| PGC       | inf | 0.010 | SNORD116-22     | inf | 0.040 |
| PHKA2-AS1 | inf | 0.011 | SNORD116-4      | inf | 0.012 |
| PI16      | inf | 0.023 | SNORD33         | inf | 0.041 |
| PIP5K1P1  | inf | 0.017 | SNORD36A        | inf | 0.041 |
| PLA2G2C   | inf | 0.032 | SNORD53         | inf | 0.040 |
| PLA2G5    | inf | 0.047 | SNORD58C        | inf | 0.017 |
| PLEKHD1   | inf | 0.029 | SNORD83B        | inf | 0.047 |
| PLEKHG7   | inf | 0.031 | SNORD9          | inf | 0.048 |
| PLIN1     | inf | 0.008 | SNPH            | inf | 0.028 |
| PLIN5     | inf | 0.016 | SNX31           | inf | 0.006 |
| PON1      | inf | 0.008 | SOD3            | inf | 0.031 |
| POU4F3    | inf | 0.028 | SOX3            | inf | 0.045 |
| PP14571   | inf | 0.015 | SP7             | inf | 0.035 |
| PPP1R2P3  | inf | 0.033 | SPANXN3         | inf | 0.039 |
| PRL       | inf | 0.044 | SPATA31C2       | inf | 0.037 |

|                |      |       |                     |      |       |
|----------------|------|-------|---------------------|------|-------|
| SPATA3-AS1     | inf  | 0.020 | ACTL7A              | -inf | 0.031 |
| SPATA4         | inf  | 0.037 | ADAMTS18            | -inf | 0.016 |
| SPERT          | inf  | 0.027 | ADAMTSL1            | -inf | 0.018 |
| SPRR3          | inf  | 0.035 | ADARB2              | -inf | 0.035 |
| ST7-AS2        | inf  | 0.035 | ADD3-AS1            | -inf | 0.027 |
| SULT1B1        | inf  | 0.031 | ADGB                | -inf | 0.046 |
| SULT1E1        | inf  | 0.033 | ADH7                | -inf | 0.018 |
| SULT2B1        | inf  | 0.018 | ADIPOQ              | -inf | 0.016 |
| SUSD4          | inf  | 0.028 | ADORA2A-AS1         | -inf | 0.018 |
| SYNGR4         | inf  | 0.038 | AFP                 | -inf | 0.023 |
| TAS2R19        | inf  | 0.038 | AGXT                | -inf | 0.031 |
| TAS2R42        | inf  | 0.030 | AIRN                | -inf | 0.043 |
| TAS2R46        | inf  | 0.048 | AK7                 | -inf | 0.011 |
| TBC1D29        | inf  | 0.039 | AKNAD1              | -inf | 0.047 |
| TBL1Y          | inf  | 0.047 | AKR1B10             | -inf | 0.029 |
| TERT           | inf  | 0.050 | AKR1C4              | -inf | 0.049 |
| TEX29          | inf  | 0.020 | ALAS2               | -inf | 0.010 |
| TFCP2L1        | inf  | 0.034 | ALDH3B2             | -inf | 0.016 |
| THOC7-AS1      | inf  | 0.011 | ALK                 | -inf | 0.032 |
| THPO           | inf  | 0.018 | ALPP                | -inf | 0.019 |
| THY1           | inf  | 0.041 | AMBP                | -inf | 0.050 |
| TLX2           | inf  | 0.037 | AMER3               | -inf | 0.046 |
| TMC3           | inf  | 0.005 | AMH                 | -inf | 0.031 |
| TMEM233        | inf  | 0.034 | AMHR2               | -inf | 0.024 |
| TMEM40         | inf  | 0.023 | AMN                 | -inf | 0.037 |
| TMPRSS3        | inf  | 0.045 | AMY2A               | -inf | 0.035 |
| TMPRSS4        | inf  | 0.025 | ANGPTL1             | -inf | 0.027 |
| TMPRSS6        | inf  | 0.050 | ANGPTL7             | -inf | 0.013 |
| TNNC2          | inf  | 0.032 | ANKRD20A1,ANKRD20A3 | -inf | 0.019 |
| TNN1           | inf  | 0.037 | ANKRD26P1           | -inf | 0.018 |
| TNNT3          | inf  | 0.049 | ANKRD53             | -inf | 0.027 |
| TRIM29         | inf  | 0.038 | ANTXRL              | -inf | 0.049 |
| TSG1           | inf  | 0.016 | ANXA10              | -inf | 0.017 |
| TSHB           | inf  | 0.014 | ANXA13              | -inf | 0.027 |
| TSPAN11        | inf  | 0.032 | ANXA8L1             | -inf | 0.037 |
| TSPYL6         | inf  | 0.012 | APOA2               | -inf | 0.016 |
| TTC9B          | inf  | 0.034 | APOB                | -inf | 0.018 |
| TTL9           | inf  | 0.042 | AQP8                | -inf | 0.019 |
| TTY15          | inf  | 0.031 | ARG1                | -inf | 0.041 |
| TTYH1          | inf  | 0.032 | ARSI                | -inf | 0.033 |
| TUBA4B         | inf  | 0.047 | ART3                | -inf | 0.035 |
| TUBB2B         | inf  | 0.047 | ASCL3               | -inf | 0.018 |
| TYRP1          | inf  | 0.021 | ASCL5               | -inf | 0.050 |
| UBE2NL         | inf  | 0.037 | ATP13A4             | -inf | 0.020 |
| UPK1A-AS1      | inf  | 0.036 | ATP1A4              | -inf | 0.023 |
| UROC1          | inf  | 0.026 | ATP5L2              | -inf | 0.009 |
| VCX            | inf  | 0.042 | ATP8A2              | -inf | 0.033 |
| VENTXP7        | inf  | 0.026 | AWAT1               | -inf | 0.030 |
| VMO1           | inf  | 0.049 | B3GNT4              | -inf | 0.023 |
| VWA3A          | inf  | 0.030 | BCL6B               | -inf | 0.025 |
| WISP2          | inf  | 0.049 | BCRP2               | -inf | 0.011 |
| WNT10A         | inf  | 0.019 | BCRP3               | -inf | 0.011 |
| WNT7A          | inf  | 0.029 | BEND2               | -inf | 0.042 |
| ZBED2          | inf  | 0.015 | BEST2               | -inf | 0.028 |
| ZNF112         | inf  | 0.038 | BEST3               | -inf | 0.002 |
| ZNF204P        | inf  | 0.035 | BEX2                | -inf | 0.031 |
| ZNF300P1       | inf  | 0.046 | BHLHA15             | -inf | 0.014 |
| ZNF541         | inf  | 0.020 | BHMT2               | -inf | 0.011 |
| ZNF571-AS1     | inf  | 0.013 | BLID                | -inf | 0.020 |
| ZNF625         | inf  | 0.023 | BNC2                | -inf | 0.034 |
| ZNF664-FAM101A | inf  | 0.046 | BOLL                | -inf | 0.041 |
| ZNF727P        | inf  | 0.043 | BRD7P3              | -inf | 0.019 |
| ZNF84          | inf  | 0.047 | BSND                | -inf | 0.039 |
| ZNF90          | inf  | 0.011 | BTBD11              | -inf | 0.044 |
| ZP1            | inf  | 0.018 | C10orf126           | -inf | 0.044 |
| ZP4            | inf  | 0.011 | C11orf44            | -inf | 0.015 |
| A1CF           | -inf | 0.019 | C11orf52            | -inf | 0.011 |
| A2ML1          | -inf | 0.011 | C11orf85            | -inf | 0.022 |
| A3GALT2        | -inf | 0.022 | C12orf54            | -inf | 0.010 |
| AADAC          | -inf | 0.017 | C12orf56            | -inf | 0.039 |
| ACADL          | -inf | 0.019 | C12orf74            | -inf | 0.049 |
| ACR            | -inf | 0.041 | C12orf80            | -inf | 0.013 |



|              |      |       |               |      |       |
|--------------|------|-------|---------------|------|-------|
| C14orf183    | -inf | 0.012 | CHGA          | -inf | 0.045 |
| C15orf54     | -inf | 0.030 | CHRD12        | -inf | 0.046 |
| C16orf96     | -inf | 0.018 | CHRNA4        | -inf | 0.035 |
| C17orf77     | -inf | 0.050 | CITED1        | -inf | 0.032 |
| C17orf82     | -inf | 0.023 | CLCA1         | -inf | 0.042 |
| C19orf67     | -inf | 0.033 | CLDN19        | -inf | 0.020 |
| C1orf100     | -inf | 0.039 | CLDN3         | -inf | 0.043 |
| C1orf105     | -inf | 0.039 | CLDN4         | -inf | 0.018 |
| C1orf194     | -inf | 0.021 | CLEC17A       | -inf | 0.033 |
| C1orf195     | -inf | 0.045 | CLEC18A       | -inf | 0.033 |
| C1orf234     | -inf | 0.036 | CLEC18B       | -inf | 0.015 |
| C1QTNF9      | -inf | 0.013 | CLEC1B        | -inf | 0.014 |
| C21orf15     | -inf | 0.029 | CLEC2A        | -inf | 0.033 |
| C2orf57      | -inf | 0.039 | CLEC4E        | -inf | 0.043 |
| C3orf20      | -inf | 0.019 | CLEC4G        | -inf | 0.040 |
| C4orf45      | -inf | 0.023 | CLECL1        | -inf | 0.026 |
| C4orf47      | -inf | 0.015 | CLIC3         | -inf | 0.035 |
| C5orf47      | -inf | 0.025 | CLIP1-AS1     | -inf | 0.039 |
| C6orf222     | -inf | 0.038 | CLK2P         | -inf | 0.014 |
| C7orf69      | -inf | 0.047 | CLLU1         | -inf | 0.047 |
| C7orf71      | -inf | 0.011 | CLRN1         | -inf | 0.015 |
| C8orf22      | -inf | 0.013 | CLYBL-AS2     | -inf | 0.024 |
| C8orf34      | -inf | 0.034 | CNBD2         | -inf | 0.025 |
| C9orf131     | -inf | 0.038 | CNGB1         | -inf | 0.034 |
| C9orf152     | -inf | 0.019 | COL16A1       | -inf | 0.019 |
| C9orf153     | -inf | 0.024 | COL1A2        | -inf | 0.020 |
| C9orf173     | -inf | 0.035 | COL20A1       | -inf | 0.047 |
| CA3          | -inf | 0.023 | COL5A1        | -inf | 0.038 |
| CABS1        | -inf | 0.013 | COMP          | -inf | 0.015 |
| CACNA2D3-AS1 | -inf | 0.039 | COX7A1        | -inf | 0.043 |
| CACNG7       | -inf | 0.030 | CPA2          | -inf | 0.037 |
| CADM3-AS1    | -inf | 0.046 | CPA6          | -inf | 0.041 |
| CALML3       | -inf | 0.011 | CPB2          | -inf | 0.036 |
| CALML5       | -inf | 0.029 | CPN2          | -inf | 0.034 |
| CAND0.11     | -inf | 0.024 | CR1L          | -inf | 0.041 |
| CARD17       | -inf | 0.012 | CR2           | -inf | 0.013 |
| CASQ2        | -inf | 0.020 | CRB3          | -inf | 0.042 |
| CATIP-AS1    | -inf | 0.037 | CRIP3         | -inf | 0.050 |
| CCAT1        | -inf | 0.029 | CRYBA1        | -inf | 0.049 |
| CCDC114      | -inf | 0.031 | CSF2          | -inf | 0.034 |
| CCDC116      | -inf | 0.038 | CSF3          | -inf | 0.030 |
| CCDC144CP    | -inf | 0.040 | CSMD1         | -inf | 0.031 |
| CCDC160      | -inf | 0.018 | CTAG2         | -inf | 0.036 |
| CCDC173      | -inf | 0.025 | CTD-2201118.1 | -inf | 0.046 |
| CCDC42B      | -inf | 0.015 | CTSL3P        | -inf | 0.046 |
| CCDC64B      | -inf | 0.049 | CTXN3         | -inf | 0.022 |
| CCDC65       | -inf | 0.024 | CXADRP3       | -inf | 0.033 |
| CCDC8        | -inf | 0.041 | CXCR1         | -inf | 0.044 |
| CCL14        | -inf | 0.001 | CXorf36       | -inf | 0.036 |
| CCL15        | -inf | 0.017 | CYLC2         | -inf | 0.036 |
| CCL15-CCL14  | -inf | 0.016 | CYP17A1       | -inf | 0.034 |
| CCL16        | -inf | 0.025 | CYP1A1        | -inf | 0.032 |
| CCL19        | -inf | 0.018 | CYP24A1       | -inf | 0.047 |
| CCL25        | -inf | 0.045 | CYP2A7        | -inf | 0.043 |
| CCM2L        | -inf | 0.021 | CYP2D6        | -inf | 0.023 |
| CCR4         | -inf | 0.019 | CYP2F1        | -inf | 0.010 |
| CCR9         | -inf | 0.013 | CYP3A4        | -inf | 0.038 |
| CD34         | -inf | 0.032 | CYP3A43       | -inf | 0.014 |
| CD7          | -inf | 0.023 | CYP4B1        | -inf | 0.030 |
| CDH1         | -inf | 0.020 | CYP4F11       | -inf | 0.042 |
| CDH18        | -inf | 0.030 | CYP4F3        | -inf | 0.048 |
| CDH9         | -inf | 0.013 | CYP4Z1        | -inf | 0.039 |
| CDK5R2       | -inf | 0.043 | CYYR1         | -inf | 0.042 |
| CDRT1        | -inf | 0.018 | DACH2         | -inf | 0.043 |
| CEACAM8      | -inf | 0.030 | DAOA-AS1      | -inf | 0.021 |
| CECR3        | -inf | 0.039 | DBH           | -inf | 0.022 |
| CELA1        | -inf | 0.023 | DBIL5P2       | -inf | 0.034 |
| CES1P1       | -inf | 0.023 | DBX2          | -inf | 0.020 |
| CES5AP1      | -inf | 0.036 | DCC           | -inf | 0.037 |
| CFB          | -inf | 0.050 | DCLK1         | -inf | 0.016 |
| CFHR3        | -inf | 0.005 | DCST1         | -inf | 0.019 |
| CGB8         | -inf | 0.023 | DCT           | -inf | 0.032 |

|              |      |       |            |      |       |
|--------------|------|-------|------------|------|-------|
| DENND2A      | -inf | 0.033 | FAR2P2     | -inf | 0.035 |
| DKFZP434K028 | -inf | 0.036 | FATE1      | -inf | 0.028 |
| DKK4         | -inf | 0.043 | FBXO47     | -inf | 0.044 |
| DLX5         | -inf | 0.017 | FBXW10     | -inf | 0.048 |
| DMBT1P1      | -inf | 0.046 | FDCSP      | -inf | 0.050 |
| DMKN         | -inf | 0.043 | FGD5P1     | -inf | 0.030 |
| DMRT1        | -inf | 0.028 | FGF10-AS1  | -inf | 0.037 |
| DMRTB1       | -inf | 0.044 | FGF17      | -inf | 0.037 |
| DNASE1L3     | -inf | 0.038 | FGF20      | -inf | 0.018 |
| DOCK4-AS1    | -inf | 0.032 | FGF22      | -inf | 0.040 |
| DOK7         | -inf | 0.045 | FGF8       | -inf | 0.029 |
| DPP10-AS1    | -inf | 0.046 | FGFBP2     | -inf | 0.035 |
| DPPA2        | -inf | 0.036 | FIGF       | -inf | 0.036 |
| DPPA3        | -inf | 0.016 | FLJ31356   | -inf | 0.029 |
| DPPA4        | -inf | 0.032 | FLJ31662   | -inf | 0.015 |
| DPYD-AS2     | -inf | 0.039 | FLJ38576   | -inf | 0.011 |
| DSG4         | -inf | 0.020 | FLJ41941   | -inf | 0.016 |
| DUOXA1       | -inf | 0.020 | FLJ44635   | -inf | 0.013 |
| DYDC1        | -inf | 0.031 | FLJ45079   | -inf | 0.045 |
| DYDC2        | -inf | 0.035 | FMO1       | -inf | 0.027 |
| DYNLRB2      | -inf | 0.029 | FMO2       | -inf | 0.033 |
| EDNRB-AS1    | -inf | 0.047 | FMO3       | -inf | 0.014 |
| EEF1DP3      | -inf | 0.034 | FMOD       | -inf | 0.016 |
| EFCAB14-AS1  | -inf | 0.023 | FMR1NB     | -inf | 0.042 |
| EFCAB6       | -inf | 0.034 | FNDC9      | -inf | 0.012 |
| EGFL6        | -inf | 0.048 | FOXA3      | -inf | 0.022 |
| EGFLAM       | -inf | 0.014 | FOXD4L3    | -inf | 0.028 |
| EID3         | -inf | 0.042 | FOXE3      | -inf | 0.015 |
| EIF1AX-AS1   | -inf | 0.049 | FOXJ1      | -inf | 0.029 |
| ELOVL2-AS1   | -inf | 0.013 | FOXS1      | -inf | 0.021 |
| ELTD1        | -inf | 0.036 | FRMD1      | -inf | 0.027 |
| EMCN         | -inf | 0.043 | FRMD6      | -inf | 0.021 |
| EMX2         | -inf | 0.028 | FRMPD4     | -inf | 0.029 |
| ENKUR        | -inf | 0.022 | FRZB       | -inf | 0.044 |
| ENO1-AS1     | -inf | 0.035 | FTCD       | -inf | 0.018 |
| ENPP3        | -inf | 0.025 | FUT6       | -inf | 0.015 |
| ENTPD3       | -inf | 0.013 | FUT9       | -inf | 0.013 |
| EPHX3        | -inf | 0.045 | FXYD7      | -inf | 0.016 |
| EPN3         | -inf | 0.023 | G6PC       | -inf | 0.022 |
| EPPIN        | -inf | 0.039 | GAL3ST2    | -inf | 0.018 |
| EPPK1        | -inf | 0.006 | GAL3ST3    | -inf | 0.035 |
| ERICH2       | -inf | 0.027 | GALNT15    | -inf | 0.037 |
| ERICH5       | -inf | 0.043 | GALNTL6    | -inf | 0.022 |
| ERN2         | -inf | 0.043 | GALP       | -inf | 0.045 |
| ETNPPL       | -inf | 0.026 | GATA1      | -inf | 0.034 |
| F13B         | -inf | 0.045 | GBA3       | -inf | 0.017 |
| F2           | -inf | 0.023 | GBP6       | -inf | 0.033 |
| FABP2        | -inf | 0.030 | GBP7       | -inf | 0.027 |
| FAM132A      | -inf | 0.039 | GCM2       | -inf | 0.030 |
| FAM133A      | -inf | 0.035 | GCNT3      | -inf | 0.011 |
| FAM133CP     | -inf | 0.031 | GCSAM      | -inf | 0.043 |
| FAM13C       | -inf | 0.019 | GDF5       | -inf | 0.041 |
| FAM154A      | -inf | 0.043 | GFRA1      | -inf | 0.044 |
| FAM160A1     | -inf | 0.039 | GFY        | -inf | 0.050 |
| FAM163B      | -inf | 0.033 | GGTLC2     | -inf | 0.019 |
| FAM170A      | -inf | 0.021 | GHSR       | -inf | 0.014 |
| FAM180A      | -inf | 0.039 | GIF        | -inf | 0.043 |
| FAM181B      | -inf | 0.013 | GIPC2      | -inf | 0.019 |
| FAM182B      | -inf | 0.035 | GJD4       | -inf | 0.035 |
| FAM183B      | -inf | 0.021 | GLTPD2     | -inf | 0.025 |
| FAM187B      | -inf | 0.030 | GMNC       | -inf | 0.002 |
| FAM189A1     | -inf | 0.014 | GNG12-AS1  | -inf | 0.029 |
| FAM19A1      | -inf | 0.037 | GOLGA8T    | -inf | 0.023 |
| FAM19A4      | -inf | 0.037 | GOLT1A     | -inf | 0.031 |
| FAM19A5      | -inf | 0.037 | GPR1       | -inf | 0.016 |
| FAM205A      | -inf | 0.035 | GPR123     | -inf | 0.049 |
| FAM218A      | -inf | 0.016 | GPR128     | -inf | 0.027 |
| FAM228A      | -inf | 0.028 | GPR142     | -inf | 0.049 |
| FAM71E2      | -inf | 0.014 | GPR151     | -inf | 0.045 |
| FAM71F1      | -inf | 0.043 | GPR158-AS1 | -inf | 0.049 |
| FAM84A       | -inf | 0.014 | GPR174     | -inf | 0.043 |
| FAM92B       | -inf | 0.013 | GPR25      | -inf | 0.033 |

|                |      |       |                 |      |       |
|----------------|------|-------|-----------------|------|-------|
| GPR27          | -inf | 0.035 | IL19            | -inf | 0.012 |
| GPR97          | -inf | 0.011 | IL23R           | -inf | 0.028 |
| GPRC6A         | -inf | 0.033 | IL37            | -inf | 0.037 |
| GRAMD2         | -inf | 0.031 | IL5             | -inf | 0.022 |
| GRID2IP        | -inf | 0.025 | IP6K3           | -inf | 0.022 |
| GRIK1          | -inf | 0.031 | IQSEC3          | -inf | 0.011 |
| GRIK3          | -inf | 0.011 | IRGC            | -inf | 0.023 |
| GRK1           | -inf | 0.014 | IRS4            | -inf | 0.040 |
| GRK7           | -inf | 0.034 | ISM1-AS1        | -inf | 0.016 |
| GS1-24F4.2     | -inf | 0.028 | ISM2            | -inf | 0.032 |
| GS1-279B7.1    | -inf | 0.026 | ITGA2B          | -inf | 0.011 |
| GSTM2P1        | -inf | 0.035 | ITGBL1          | -inf | 0.014 |
| GSTT1          | -inf | 0.019 | ITPK1-AS1       | -inf | 0.026 |
| GUCA2A         | -inf | 0.032 | ITPKB-IT1       | -inf | 0.017 |
| GUCA2B         | -inf | 0.013 | ITPRIPL1        | -inf | 0.014 |
| GYPA           | -inf | 0.033 | IYD             | -inf | 0.032 |
| H1FNT          | -inf | 0.020 | JAK3            | -inf | 0.021 |
| HAND2          | -inf | 0.025 | JPH3            | -inf | 0.030 |
| HAO1           | -inf | 0.033 | KCNB1           | -inf | 0.037 |
| HAR1A          | -inf | 0.044 | KCNE4           | -inf | 0.047 |
| HAS1           | -inf | 0.046 | KCNG2           | -inf | 0.029 |
| HAS2           | -inf | 0.023 | KCNH7           | -inf | 0.049 |
| HBD            | -inf | 0.018 | KCNJ4           | -inf | 0.044 |
| HBE1           | -inf | 0.030 | KCNK9           | -inf | 0.020 |
| HCCAT3         | -inf | 0.011 | KCNQ1DN         | -inf | 0.049 |
| HCRTR1         | -inf | 0.047 | KCNT1           | -inf | 0.047 |
| HDX            | -inf | 0.039 | KCNT2           | -inf | 0.040 |
| HES7           | -inf | 0.013 | KCNV2           | -inf | 0.042 |
| HGC6.3         | -inf | 0.026 | KDF1            | -inf | 0.034 |
| HHLA1          | -inf | 0.025 | KHDC1L          | -inf | 0.025 |
| HID1           | -inf | 0.026 | KIAA0125        | -inf | 0.042 |
| HIF3A          | -inf | 0.032 | KIAA1217        | -inf | 0.013 |
| HIGD2B         | -inf | 0.038 | KIAA1751        | -inf | 0.035 |
| HIST1H2AB      | -inf | 0.038 | KIF12           | -inf | 0.037 |
| HIST1H2BE      | -inf | 0.022 | KIF25           | -inf | 0.023 |
| HIST1H3J       | -inf | 0.036 | KIF6            | -inf | 0.025 |
| HIST3H3        | -inf | 0.016 | KIR2DL1         | -inf | 0.047 |
| HMCN2          | -inf | 0.019 | KIR2DL3         | -inf | 0.042 |
| HMSD           | -inf | 0.021 | KIR3DL3         | -inf | 0.016 |
| HNF1B          | -inf | 0.030 | KLF1            | -inf | 0.019 |
| HNRNPCL2       | -inf | 0.028 | KLF2            | -inf | 0.018 |
| HORMAD2        | -inf | 0.033 | KLHDC9          | -inf | 0.040 |
| HOXB13         | -inf | 0.041 | KPNA7           | -inf | 0.035 |
| HOXC5          | -inf | 0.015 | KRBOX1          | -inf | 0.041 |
| HOXD10         | -inf | 0.019 | KRT14           | -inf | 0.018 |
| HOXD11         | -inf | 0.002 | KRT16           | -inf | 0.012 |
| HP09025        | -inf | 0.029 | KRT35           | -inf | 0.042 |
| HPGDS          | -inf | 0.031 | KRT37           | -inf | 0.040 |
| HPR            | -inf | 0.001 | KRT81           | -inf | 0.048 |
| HPX            | -inf | 0.043 | KRT8P41         | -inf | 0.017 |
| HRASLS2        | -inf | 0.026 | KRTAP19-1       | -inf | 0.046 |
| HRH3           | -inf | 0.039 | KRTAP19-8       | -inf | 0.048 |
| HSD52          | -inf | 0.019 | KRTAP9-8        | -inf | 0.034 |
| HSPA12B        | -inf | 0.028 | KRTDAP          | -inf | 0.049 |
| HSPB2-C11orf52 | -inf | 0.016 | LDHC            | -inf | 0.037 |
| HTR4           | -inf | 0.025 | LDLRAD2         | -inf | 0.012 |
| HTR5A          | -inf | 0.028 | LEFTY2          | -inf | 0.015 |
| HUS1B          | -inf | 0.029 | LGALS17A        | -inf | 0.037 |
| IAPP           | -inf | 0.026 | LHB             | -inf | 0.018 |
| IDO2           | -inf | 0.018 | LHX5            | -inf | 0.019 |
| IFNA14         | -inf | 0.047 | LHX6            | -inf | 0.047 |
| IFNW1          | -inf | 0.010 | LILRB5          | -inf | 0.032 |
| IGBP1P1        | -inf | 0.050 | LIMS3-LOC440895 | -inf | 0.040 |
| IGDCC3         | -inf | 0.042 | LINC00028       | -inf | 0.026 |
| IGF2-AS        | -inf | 0.049 | LINC00102       | -inf | 0.013 |
| IGLL1          | -inf | 0.047 | LINC00222       | -inf | 0.044 |
| IGSF23         | -inf | 0.019 | LINC00235       | -inf | 0.031 |
| IGSF5          | -inf | 0.025 | LINC00311       | -inf | 0.039 |
| IHH            | -inf | 0.028 | LINC00313       | -inf | 0.017 |
| IL12B          | -inf | 0.042 | LINC00322       | -inf | 0.014 |
| IL17C          | -inf | 0.049 | LINC00330       | -inf | 0.037 |
| IL18RAP        | -inf | 0.031 | LINC00359       | -inf | 0.038 |

|              |      |       |              |      |       |
|--------------|------|-------|--------------|------|-------|
| LINC00371    | -inf | 0.018 | LOC100420587 | -inf | 0.029 |
| LINC00379    | -inf | 0.011 | LOC100505817 | -inf | 0.010 |
| LINC00398    | -inf | 0.049 | LOC100506085 | -inf | 0.023 |
| LINC00410    | -inf | 0.028 | LOC100506178 | -inf | 0.045 |
| LINC00452    | -inf | 0.039 | LOC100506384 | -inf | 0.046 |
| LINC00458    | -inf | 0.029 | LOC100506388 | -inf | 0.031 |
| LINC00470    | -inf | 0.015 | LOC100506403 | -inf | 0.004 |
| LINC00478    | -inf | 0.018 | LOC100506675 | -inf | 0.040 |
| LINC00492    | -inf | 0.030 | LOC100507195 | -inf | 0.019 |
| LINC00535    | -inf | 0.039 | LOC100507377 | -inf | 0.050 |
| LINC00547    | -inf | 0.025 | LOC100996325 | -inf | 0.026 |
| LINC00559    | -inf | 0.036 | LOC100996455 | -inf | 0.038 |
| LINC00568    | -inf | 0.041 | LOC100996693 | -inf | 0.026 |
| LINC00582    | -inf | 0.012 | LOC101060385 | -inf | 0.029 |
| LINC00589    | -inf | 0.013 | LOC101559451 | -inf | 0.001 |
| LINC00598    | -inf | 0.017 | LOC101593348 | -inf | 0.018 |
| LINC00624    | -inf | 0.035 | LOC101926897 | -inf | 0.040 |
| LINC00628    | -inf | 0.021 | LOC101926924 | -inf | 0.014 |
| LINC00633    | -inf | 0.036 | LOC101927015 | -inf | 0.033 |
| LINC00636    | -inf | 0.014 | LOC101927023 | -inf | 0.021 |
| LINC00645    | -inf | 0.050 | LOC101927087 | -inf | 0.015 |
| LINC00656    | -inf | 0.048 | LOC101927164 | -inf | 0.016 |
| LINC00670    | -inf | 0.032 | LOC101927239 | -inf | 0.001 |
| LINC00689    | -inf | 0.033 | LOC101927282 | -inf | 0.038 |
| LINC00836    | -inf | 0.013 | LOC101927332 | -inf | 0.021 |
| LINC00838    | -inf | 0.021 | LOC101927410 | -inf | 0.015 |
| LINC00839    | -inf | 0.030 | LOC101927437 | -inf | 0.029 |
| LINC00857    | -inf | 0.022 | LOC101927478 | -inf | 0.034 |
| LINC00858    | -inf | 0.044 | LOC101927560 | -inf | 0.033 |
| LINC00880    | -inf | 0.046 | LOC101927571 | -inf | 0.026 |
| LINC00881    | -inf | 0.033 | LOC101927575 | -inf | 0.026 |
| LINC00889    | -inf | 0.018 | LOC101927583 | -inf | 0.049 |
| LINC00890    | -inf | 0.028 | LOC101927653 | -inf | 0.020 |
| LINC00950    | -inf | 0.041 | LOC101927688 | -inf | 0.031 |
| LINC00961    | -inf | 0.027 | LOC101927796 | -inf | 0.041 |
| LINC01006    | -inf | 0.010 | LOC101927829 | -inf | 0.019 |
| LINC01013    | -inf | 0.039 | LOC101927847 | -inf | 0.038 |
| LINC01095    | -inf | 0.043 | LOC101927881 | -inf | 0.049 |
| LINC01097    | -inf | 0.027 | LOC101927884 | -inf | 0.035 |
| LINC01120    | -inf | 0.033 | LOC101927911 | -inf | 0.033 |
| LINC01136    | -inf | 0.038 | LOC101927950 | -inf | 0.012 |
| LINC01185    | -inf | 0.044 | LOC101928036 | -inf | 0.027 |
| LINC01187    | -inf | 0.028 | LOC101928104 | -inf | 0.027 |
| LINC01207    | -inf | 0.042 | LOC101928122 | -inf | 0.013 |
| LINC01214    | -inf | 0.010 | LOC101928161 | -inf | 0.032 |
| LINC01220    | -inf | 0.021 | LOC101928222 | -inf | 0.038 |
| LINC01227    | -inf | 0.021 | LOC101928266 | -inf | 0.017 |
| LINC01251    | -inf | 0.037 | LOC101928283 | -inf | 0.037 |
| LINC01284    | -inf | 0.045 | LOC101928303 | -inf | 0.029 |
| LINC01338    | -inf | 0.043 | LOC101928363 | -inf | 0.038 |
| LINC01360    | -inf | 0.033 | LOC101928401 | -inf | 0.028 |
| LINC01361    | -inf | 0.019 | LOC101928416 | -inf | 0.049 |
| LINC01364    | -inf | 0.040 | LOC101928441 | -inf | 0.045 |
| LMCD1        | -inf | 0.014 | LOC101928446 | -inf | 0.017 |
| LMF1-AS1     | -inf | 0.020 | LOC101928766 | -inf | 0.037 |
| LMO1         | -inf | 0.044 | LOC101928782 | -inf | 0.013 |
| LMOD1        | -inf | 0.024 | LOC101928794 | -inf | 0.050 |
| LMX1A        | -inf | 0.031 | LOC101928837 | -inf | 0.022 |
| LOC100126784 | -inf | 0.029 | LOC101928861 | -inf | 0.015 |
| LOC100128176 | -inf | 0.030 | LOC101928894 | -inf | 0.050 |
| LOC100128568 | -inf | 0.039 | LOC101928909 | -inf | 0.025 |
| LOC100128573 | -inf | 0.018 | LOC101928992 | -inf | 0.027 |
| LOC100129520 | -inf | 0.041 | LOC101929173 | -inf | 0.026 |
| LOC100129697 | -inf | 0.037 | LOC101929181 | -inf | 0.012 |
| LOC100129722 | -inf | 0.046 | LOC101929282 | -inf | 0.016 |
| LOC100129973 | -inf | 0.040 | LOC101929344 | -inf | 0.049 |
| LOC100132831 | -inf | 0.049 | LOC101929371 | -inf | 0.043 |
| LOC100133050 | -inf | 0.036 | LOC101929486 | -inf | 0.013 |
| LOC100134391 | -inf | 0.030 | LOC101929528 | -inf | 0.016 |
| LOC100288866 | -inf | 0.012 | LOC101929591 | -inf | 0.034 |
| LOC100288974 | -inf | 0.035 | LOC101929596 | -inf | 0.032 |
| LOC100289333 | -inf | 0.024 | LOC101929655 | -inf | 0.028 |

|              |      |       |           |      |       |
|--------------|------|-------|-----------|------|-------|
| LOC101929717 | -inf | 0.032 | MAP9      | -inf | 0.010 |
| LOC101929829 | -inf | 0.013 | MAPK4     | -inf | 0.040 |
| LOC102467146 | -inf | 0.016 | MAPT      | -inf | 0.041 |
| LOC102546294 | -inf | 0.029 | MARVELD3  | -inf | 0.021 |
| LOC102546298 | -inf | 0.043 | MATN3     | -inf | 0.041 |
| LOC102723344 | -inf | 0.016 | MBL2      | -inf | 0.029 |
| LOC102724094 | -inf | 0.029 | MCF2L     | -inf | 0.040 |
| LOC102724820 | -inf | 0.031 | MECOM     | -inf | 0.034 |
| LOC145474    | -inf | 0.024 | MEG3      | -inf | 0.045 |
| LOC149684    | -inf | 0.024 | MEG9      | -inf | 0.048 |
| LOC150935    | -inf | 0.048 | MFAP2     | -inf | 0.017 |
| LOC151484    | -inf | 0.027 | MFSD6L    | -inf | 0.016 |
| LOC154449    | -inf | 0.019 | MICU3     | -inf | 0.045 |
| LOC154872    | -inf | 0.040 | MIR1260B  | -inf | 0.038 |
| LOC157273    | -inf | 0.027 | MIR1307   | -inf | 0.029 |
| LOC283045    | -inf | 0.011 | MIR223    | -inf | 0.025 |
| LOC283177    | -inf | 0.035 | MIR30E    | -inf | 0.046 |
| LOC283585    | -inf | 0.033 | MIR378J   | -inf | 0.012 |
| LOC283692    | -inf | 0.038 | MIR3911   | -inf | 0.049 |
| LOC283731    | -inf | 0.028 | MIR4697HG | -inf | 0.034 |
| LOC284009    | -inf | 0.031 | MIR4800   | -inf | 0.015 |
| LOC284379    | -inf | 0.018 | MIR5010   | -inf | 0.039 |
| LOC285762    | -inf | 0.021 | MIR5193   | -inf | 0.029 |
| LOC285889    | -inf | 0.049 | MIR589    | -inf | 0.022 |
| LOC339166    | -inf | 0.041 | MIR6084   | -inf | 0.042 |
| LOC341056    | -inf | 0.048 | MIR612    | -inf | 0.028 |
| LOC388242    | -inf | 0.030 | MIR6728   | -inf | 0.021 |
| LOC400043    | -inf | 0.019 | MIR6753   | -inf | 0.049 |
| LOC400620    | -inf | 0.049 | MIR6826   | -inf | 0.026 |
| LOC400655    | -inf | 0.039 | MIR7161   | -inf | 0.014 |
| LOC400891    | -inf | 0.015 | MIR7-3HG  | -inf | 0.036 |
| LOC400940    | -inf | 0.018 | MIR7844   | -inf | 0.022 |
| LOC401286    | -inf | 0.035 | MIR941-1  | -inf | 0.017 |
| LOC402160    | -inf | 0.020 | MIR96     | -inf | 0.042 |
| LOC440173    | -inf | 0.048 | MISP      | -inf | 0.010 |
| LOC440602    | -inf | 0.046 | MKRN2OS   | -inf | 0.037 |
| LOC440700    | -inf | 0.042 | MKRN9P    | -inf | 0.039 |
| LOC440895    | -inf | 0.035 | MOBP      | -inf | 0.039 |
| LOC442028    | -inf | 0.049 | MOS       | -inf | 0.047 |
| LOC642943    | -inf | 0.012 | MPP4      | -inf | 0.029 |
| LOC643201    | -inf | 0.025 | MRO       | -inf | 0.033 |
| LOC643355    | -inf | 0.048 | MROH2B    | -inf | 0.022 |
| LOC643387    | -inf | 0.044 | MSTN      | -inf | 0.021 |
| LOC645949    | -inf | 0.040 | MT1B      | -inf | 0.027 |
| LOC646903    | -inf | 0.049 | MT1DP     | -inf | 0.024 |
| LOC650226    | -inf | 0.038 | MT1H      | -inf | 0.012 |
| LOC650293    | -inf | 0.027 | MT1L      | -inf | 0.039 |
| LOC728175    | -inf | 0.038 | MTNR1B    | -inf | 0.023 |
| LOC728463    | -inf | 0.024 | MUC13     | -inf | 0.039 |
| LOC728819    | -inf | 0.039 | MUC15     | -inf | 0.033 |
| LOC729080    | -inf | 0.024 | MUC17     | -inf | 0.016 |
| LOC91450     | -inf | 0.034 | MUC4      | -inf | 0.023 |
| LOC93432     | -inf | 0.019 | MUC5B     | -inf | 0.033 |
| LPPR5        | -inf | 0.029 | MUC7      | -inf | 0.042 |
| LRRC26       | -inf | 0.014 | MXRA5     | -inf | 0.045 |
| LRRC31       | -inf | 0.048 | MYADML    | -inf | 0.046 |
| LRRC37A11P   | -inf | 0.029 | MYBPC1    | -inf | 0.024 |
| LRRC9        | -inf | 0.042 | MYH16     | -inf | 0.018 |
| LRRD1        | -inf | 0.020 | MYOM3     | -inf | 0.027 |
| LRRIQ4       | -inf | 0.033 | MYOT      | -inf | 0.036 |
| LRRN3        | -inf | 0.013 | MYT1      | -inf | 0.030 |
| LRRTM4       | -inf | 0.045 | NACAP1    | -inf | 0.034 |
| LURAP1       | -inf | 0.022 | NAGPA-AS1 | -inf | 0.034 |
| LYG2         | -inf | 0.040 | NBPF18P   | -inf | 0.034 |
| LYPD6B       | -inf | 0.021 | NEFM      | -inf | 0.042 |
| LYVE1        | -inf | 0.046 | NEU4      | -inf | 0.033 |
| MAGEA11      | -inf | 0.012 | NEUROD4   | -inf | 0.028 |
| MAGEE2       | -inf | 0.030 | NEUROG3   | -inf | 0.001 |
| MAGI1        | -inf | 0.021 | NEXN-AS1  | -inf | 0.032 |
| MAGOH2       | -inf | 0.022 | NFKBIL1   | -inf | 0.019 |
| MAL          | -inf | 0.041 | NHLH2     | -inf | 0.014 |
| MALL         | -inf | 0.027 | NKX2-2    | -inf | 0.000 |

|            |      |       |             |      |       |
|------------|------|-------|-------------|------|-------|
| NLGN4X     | -inf | 0.014 | PCAT18      | -inf | 0.020 |
| NLGN4Y-AS1 | -inf | 0.021 | PCAT5       | -inf | 0.014 |
| NLRP10     | -inf | 0.049 | PCDH15      | -inf | 0.048 |
| NLRP11     | -inf | 0.045 | PCDHGA3     | -inf | 0.021 |
| NLRP14     | -inf | 0.039 | PCDHGA6     | -inf | 0.025 |
| NLRP7      | -inf | 0.044 | PCDHGB1     | -inf | 0.038 |
| NME8       | -inf | 0.049 | PCDHGB5     | -inf | 0.036 |
| NMU        | -inf | 0.017 | PCOLCE-AS1  | -inf | 0.037 |
| NOS1       | -inf | 0.018 | PCYT1B      | -inf | 0.046 |
| NOX4       | -inf | 0.029 | PDE6G       | -inf | 0.044 |
| NPB        | -inf | 0.042 | PDE6H       | -inf | 0.024 |
| NPHS1      | -inf | 0.034 | PDZD9       | -inf | 0.029 |
| NPPA       | -inf | 0.014 | PDZK1       | -inf | 0.044 |
| NPPB       | -inf | 0.023 | PEG3        | -inf | 0.015 |
| NPY4R      | -inf | 0.045 | PEG3-AS1    | -inf | 0.047 |
| NR3C2      | -inf | 0.037 | PF4         | -inf | 0.047 |
| NSG1       | -inf | 0.048 | PGA3        | -inf | 0.012 |
| NSUN7      | -inf | 0.018 | PHEX-AS1    | -inf | 0.045 |
| NT5C1B     | -inf | 0.048 | PHGR1       | -inf | 0.030 |
| NTF4       | -inf | 0.039 | PHOX2A      | -inf | 0.049 |
| NTN5       | -inf | 0.011 | PIN4P1      | -inf | 0.046 |
| NTRK3-AS1  | -inf | 0.038 | PKP1        | -inf | 0.009 |
| NYAP1      | -inf | 0.013 | PLA2G12B    | -inf | 0.032 |
| OACYLP     | -inf | 0.048 | PLA2G4E     | -inf | 0.022 |
| ODF3       | -inf | 0.030 | PLCXD3      | -inf | 0.038 |
| ODF3L2     | -inf | 0.025 | PLEKHS1     | -inf | 0.021 |
| OIT3       | -inf | 0.050 | PLSCR2      | -inf | 0.025 |
| OLFM3      | -inf | 0.033 | PMP2        | -inf | 0.016 |
| OOEP       | -inf | 0.034 | PNMA3       | -inf | 0.036 |
| OPN5       | -inf | 0.013 | PNMA5       | -inf | 0.044 |
| OPRK1      | -inf | 0.038 | PNPLA5      | -inf | 0.028 |
| OPTC       | -inf | 0.010 | POM121L8P   | -inf | 0.007 |
| OR10G2     | -inf | 0.041 | POM121L9P   | -inf | 0.007 |
| OR10J1     | -inf | 0.037 | POTED       | -inf | 0.012 |
| OR10V2P    | -inf | 0.027 | POU5F1      | -inf | 0.034 |
| OR13D1     | -inf | 0.049 | POU5F1B     | -inf | 0.038 |
| OR1C1      | -inf | 0.010 | POU5F1P3    | -inf | 0.027 |
| OR1J1      | -inf | 0.043 | POU5F1P4    | -inf | 0.021 |
| OR2A20P    | -inf | 0.018 | POU5F2      | -inf | 0.042 |
| OR2A9P     | -inf | 0.023 | PPIAP30     | -inf | 0.049 |
| OR2AT4     | -inf | 0.034 | PRAC2       | -inf | 0.030 |
| OR2C1      | -inf | 0.029 | PRDM12      | -inf | 0.039 |
| OR2W5      | -inf | 0.022 | PRKAG3      | -inf | 0.022 |
| OR51B4     | -inf | 0.013 | PROK1       | -inf | 0.025 |
| OR52B6     | -inf | 0.027 | PROSER2-AS1 | -inf | 0.014 |
| OR52E2     | -inf | 0.033 | PROZ        | -inf | 0.011 |
| OR52H1     | -inf | 0.032 | PRR29       | -inf | 0.017 |
| OR52I1     | -inf | 0.041 | PRRT3-AS1   | -inf | 0.025 |
| OR52N4     | -inf | 0.021 | PTCHD2      | -inf | 0.029 |
| OR5B21     | -inf | 0.048 | PTENP1-AS   | -inf | 0.017 |
| OR5K2      | -inf | 0.039 | PTGDR       | -inf | 0.011 |
| OR6Q1      | -inf | 0.029 | PTH2R       | -inf | 0.034 |
| OR7C2      | -inf | 0.040 | PTN         | -inf | 0.011 |
| OR7D2      | -inf | 0.038 | PTPRCAP     | -inf | 0.046 |
| OR7E24     | -inf | 0.039 | PTPRZ1      | -inf | 0.027 |
| OR7E2P     | -inf | 0.030 | PVRL3-AS1   | -inf | 0.040 |
| OR8D1      | -inf | 0.040 | PYY         | -inf | 0.036 |
| OSMR-AS1   | -inf | 0.043 | PZP         | -inf | 0.029 |
| OTOP1      | -inf | 0.029 | QRFP        | -inf | 0.035 |
| OTX2       | -inf | 0.023 | QRFP        | -inf | 0.023 |
| P2RX2      | -inf | 0.025 | RAB3C       | -inf | 0.022 |
| P2RX3      | -inf | 0.037 | RAB41       | -inf | 0.018 |
| PABPC3     | -inf | 0.029 | RAI2        | -inf | 0.017 |
| PABPC5-AS1 | -inf | 0.034 | RAMP2       | -inf | 0.043 |
| PADI6      | -inf | 0.034 | RBAK-RBAKDN | -inf | 0.028 |
| PAPOLB     | -inf | 0.021 | RBFOX3      | -inf | 0.046 |
| PARD3B     | -inf | 0.034 | RBP2        | -inf | 0.035 |
| PATE2      | -inf | 0.039 | RBP5        | -inf | 0.025 |
| PAX7       | -inf | 0.013 | RBP7        | -inf | 0.037 |
| PAX9       | -inf | 0.015 | RCVRN       | -inf | 0.048 |
| PBOV1      | -inf | 0.003 | RD3         | -inf | 0.039 |
| PCAT1      | -inf | 0.014 | RDH16       | -inf | 0.027 |

|              |      |       |             |      |       |
|--------------|------|-------|-------------|------|-------|
| RERG         | -inf | 0.039 | SLC38A4     | -inf | 0.046 |
| RFX4         | -inf | 0.049 | SLC3A1      | -inf | 0.028 |
| RFX6         | -inf | 0.030 | SLC45A2     | -inf | 0.047 |
| RGS11        | -inf | 0.039 | SLC6A20     | -inf | 0.015 |
| RILAD1       | -inf | 0.046 | SLC7A14     | -inf | 0.043 |
| RIPPLY2      | -inf | 0.007 | SLC7A4      | -inf | 0.028 |
| RLN2         | -inf | 0.028 | SLC9C2      | -inf | 0.043 |
| RNF133       | -inf | 0.042 | SLCO1A2     | -inf | 0.034 |
| RNF138P1     | -inf | 0.034 | SLFN14      | -inf | 0.013 |
| RNF183       | -inf | 0.041 | SLIT2-IT1   | -inf | 0.038 |
| RNF216-IT1   | -inf | 0.049 | SLITRK3     | -inf | 0.046 |
| RNF43        | -inf | 0.044 | SLITRK6     | -inf | 0.013 |
| RP1          | -inf | 0.016 | SMC5-AS1    | -inf | 0.032 |
| RP11-87M18.2 | -inf | 0.023 | SNAP25-AS1  | -inf | 0.045 |
| RPL10L       | -inf | 0.031 | SNORA16A    | -inf | 0.030 |
| RPL13AP3     | -inf | 0.011 | SNORA16B    | -inf | 0.028 |
| RPL13AP6     | -inf | 0.035 | SNORA18     | -inf | 0.021 |
| RPTN         | -inf | 0.003 | SNORA21     | -inf | 0.040 |
| RSPO4        | -inf | 0.012 | SNORA23     | -inf | 0.028 |
| RSU1P2       | -inf | 0.034 | SNORA27     | -inf | 0.043 |
| RTDR1        | -inf | 0.043 | SNORA29     | -inf | 0.035 |
| RTP1         | -inf | 0.041 | SNORA36A    | -inf | 0.047 |
| S100A7       | -inf | 0.032 | SNORA37     | -inf | 0.012 |
| S100Z        | -inf | 0.050 | SNORA40     | -inf | 0.018 |
| S1PR4        | -inf | 0.037 | SNORA41     | -inf | 0.044 |
| SAA2         | -inf | 0.024 | SNORA43     | -inf | 0.038 |
| SBK3         | -inf | 0.029 | SNORA51     | -inf | 0.025 |
| SCARA5       | -inf | 0.016 | SNORA5A     | -inf | 0.017 |
| SCARNA10     | -inf | 0.035 | SNORA5C     | -inf | 0.033 |
| SCARNA5      | -inf | 0.010 | SNORA6      | -inf | 0.049 |
| SCGN         | -inf | 0.014 | SNORA66     | -inf | 0.010 |
| SCN11A       | -inf | 0.047 | SNORA71B    | -inf | 0.024 |
| SCN1A        | -inf | 0.031 | SNORA74B    | -inf | 0.024 |
| SCRT1        | -inf | 0.047 | SNORD116-24 | -inf | 0.032 |
| SCTR         | -inf | 0.049 | SNORD116-8  | -inf | 0.028 |
| SEL1L2       | -inf | 0.048 | SNORD124    | -inf | 0.034 |
| SELENBP1     | -inf | 0.039 | SNORD21     | -inf | 0.027 |
| SEPT12       | -inf | 0.038 | SNORD32A    | -inf | 0.013 |
| SERPINA6     | -inf | 0.019 | SNORD35B    | -inf | 0.017 |
| SERPINA7     | -inf | 0.044 | SNORD58A    | -inf | 0.017 |
| SERPINE3     | -inf | 0.013 | SNORD79     | -inf | 0.031 |
| SFRP5        | -inf | 0.024 | SNORD88B    | -inf | 0.035 |
| SFTPB        | -inf | 0.032 | SOC52       | -inf | 0.047 |
| SH2D6        | -inf | 0.035 | SOX18       | -inf | 0.035 |
| SHANK2       | -inf | 0.042 | SOX2-OT     | -inf | 0.039 |
| SHBG         | -inf | 0.038 | SOX30       | -inf | 0.031 |
| SHH          | -inf | 0.002 | SOX9-AS1    | -inf | 0.016 |
| SHISA8       | -inf | 0.015 | SPAG17      | -inf | 0.014 |
| SHOX         | -inf | 0.024 | SPAM1       | -inf | 0.030 |
| SIGLEC8      | -inf | 0.020 | SPEF1       | -inf | 0.020 |
| SIRPG        | -inf | 0.031 | SPG200S     | -inf | 0.017 |
| SIX3-AS1     | -inf | 0.013 | SPHKAP      | -inf | 0.012 |
| SLC16A11     | -inf | 0.036 | SPOCK3      | -inf | 0.039 |
| SLC17A6      | -inf | 0.014 | SPRR2A      | -inf | 0.039 |
| SLC17A8      | -inf | 0.047 | SPRR2D      | -inf | 0.028 |
| SLC19A3      | -inf | 0.047 | SPTBN4      | -inf | 0.040 |
| SLC22A1      | -inf | 0.044 | SRGAP3-AS3  | -inf | 0.039 |
| SLC22A13     | -inf | 0.026 | SRMS        | -inf | 0.019 |
| SLC24A2      | -inf | 0.010 | SRRM4       | -inf | 0.042 |
| SLC25A2      | -inf | 0.024 | SSTR3       | -inf | 0.047 |
| SLC25A30-AS1 | -inf | 0.037 | SSTR5       | -inf | 0.036 |
| SLC25A31     | -inf | 0.025 | ST8SIA6     | -inf | 0.027 |
| SLC25A3P1    | -inf | 0.006 | STAB2       | -inf | 0.028 |
| SLC25A47     | -inf | 0.049 | STK33       | -inf | 0.026 |
| SLC25A52     | -inf | 0.046 | STMN4       | -inf | 0.035 |
| SLC26A3      | -inf | 0.038 | SULT1A3     | -inf | 0.022 |
| SLC26A4-AS1  | -inf | 0.049 | SULT1C3     | -inf | 0.041 |
| SLC26A5      | -inf | 0.047 | SVOPL       | -inf | 0.036 |
| SLC30A2      | -inf | 0.027 | SYCP1       | -inf | 0.050 |
| SLC35D3      | -inf | 0.010 | SYNDIG1L    | -inf | 0.029 |
| SLC35G6      | -inf | 0.038 | SYNE4       | -inf | 0.013 |
| SLC36A3      | -inf | 0.011 | SYT14L      | -inf | 0.045 |

|             |      |       |            |      |       |
|-------------|------|-------|------------|------|-------|
| SYT16       | -inf | 0.017 | TRPC5      | -inf | 0.025 |
| SYT5        | -inf | 0.022 | TRPM1      | -inf | 0.020 |
| SYT9        | -inf | 0.017 | TRPV6      | -inf | 0.012 |
| TACR1       | -inf | 0.041 | TSKS       | -inf | 0.030 |
| TAGLN3      | -inf | 0.048 | TSSK1B     | -inf | 0.040 |
| TARP        | -inf | 0.019 | TSTD1      | -inf | 0.040 |
| TAS2R10     | -inf | 0.031 | TTC23L     | -inf | 0.030 |
| TAS2R3      | -inf | 0.038 | TTC24      | -inf | 0.015 |
| TAS2R30     | -inf | 0.047 | TTLL6      | -inf | 0.037 |
| TAS2R5      | -inf | 0.027 | TTR        | -inf | 0.032 |
| TBC1D28     | -inf | 0.023 | TUBB8      | -inf | 0.010 |
| TBC1D3P5    | -inf | 0.029 | TULP1      | -inf | 0.033 |
| TCEAL2      | -inf | 0.034 | TULP2      | -inf | 0.019 |
| TCERG1L     | -inf | 0.023 | TUSC3      | -inf | 0.027 |
| TCF15       | -inf | 0.036 | TUSC8      | -inf | 0.016 |
| TDH         | -inf | 0.021 | UBE2E4P    | -inf | 0.019 |
| TDRP        | -inf | 0.019 | UBE2QL1    | -inf | 0.045 |
| TEDDM1      | -inf | 0.042 | UBOX5-AS1  | -inf | 0.042 |
| TERC        | -inf | 0.013 | UBTFL1     | -inf | 0.043 |
| TEX101      | -inf | 0.041 | UCA1       | -inf | 0.044 |
| TEX26       | -inf | 0.013 | UCHL1      | -inf | 0.013 |
| TEX28       | -inf | 0.043 | UGT2B11    | -inf | 0.016 |
| TEX38       | -inf | 0.049 | UGT2B4     | -inf | 0.037 |
| TEX40       | -inf | 0.038 | UGT3A1     | -inf | 0.038 |
| TFAMP1      | -inf | 0.036 | UNC5CL     | -inf | 0.045 |
| TFDP3       | -inf | 0.024 | UPK1B      | -inf | 0.018 |
| THRSP       | -inf | 0.024 | USP12-AS2  | -inf | 0.044 |
| TM6SF2      | -inf | 0.033 | USP9Y      | -inf | 0.034 |
| TMED11P     | -inf | 0.026 | VIL1       | -inf | 0.038 |
| TMEM132D    | -inf | 0.048 | VSX2       | -inf | 0.021 |
| TMEM132E    | -inf | 0.028 | VWA1       | -inf | 0.036 |
| TMEM14E     | -inf | 0.047 | VWA3B      | -inf | 0.020 |
| TMEM178B    | -inf | 0.040 | VWC2       | -inf | 0.043 |
| TMEM179     | -inf | 0.015 | WASF3      | -inf | 0.029 |
| TMEM210     | -inf | 0.036 | WBSCR17    | -inf | 0.013 |
| TMEM213     | -inf | 0.016 | WBSCR27    | -inf | 0.027 |
| TMEM220-AS1 | -inf | 0.011 | WDR38      | -inf | 0.045 |
| TMEM235     | -inf | 0.014 | WDR86      | -inf | 0.028 |
| TMEM252     | -inf | 0.017 | WFDC8      | -inf | 0.018 |
| TMEM262     | -inf | 0.024 | WIF1       | -inf | 0.027 |
| TMEM30B     | -inf | 0.048 | WNT2       | -inf | 0.048 |
| TMEM31      | -inf | 0.041 | WNT3A      | -inf | 0.035 |
| TMEM88      | -inf | 0.008 | WTH3DI     | -inf | 0.049 |
| TMPRSS11GP  | -inf | 0.033 | XG         | -inf | 0.049 |
| TMPRSS15    | -inf | 0.026 | XKR7       | -inf | 0.025 |
| TMPRSS2     | -inf | 0.041 | YIPF7      | -inf | 0.046 |
| TNFRSF4     | -inf | 0.036 | ZAR1       | -inf | 0.040 |
| TNFSF8      | -inf | 0.041 | ZBP1       | -inf | 0.017 |
| TNMD        | -inf | 0.036 | ZDHHC19    | -inf | 0.045 |
| TNNC1       | -inf | 0.035 | ZFP42      | -inf | 0.032 |
| TOPAZ1      | -inf | 0.041 | ZFR2       | -inf | 0.017 |
| TP53TG5     | -inf | 0.030 | ZNF208     | -inf | 0.020 |
| TPH1        | -inf | 0.033 | ZNF295-AS1 | -inf | 0.017 |
| TPO         | -inf | 0.049 | ZNF33BP1   | -inf | 0.035 |
| TPRX1       | -inf | 0.018 | ZNF503-AS1 | -inf | 0.029 |
| TPSD1       | -inf | 0.029 | ZNF534     | -inf | 0.039 |
| TPSG1       | -inf | 0.021 | ZNF563     | -inf | 0.036 |
| TRAPPC3L    | -inf | 0.013 | ZNF626     | -inf | 0.026 |
| TREML4      | -inf | 0.025 | ZNF667-AS1 | -inf | 0.011 |
| TRERNA1     | -inf | 0.050 | ZNF705A    | -inf | 0.048 |
| TRIL        | -inf | 0.014 | ZSCAN16    | -inf | 0.049 |
| TRIM60      | -inf | 0.045 | ZSCAN4     | -inf | 0.033 |



**Table S7** mRNA modulated in THP-1 cells exposed to 5 µg ml<sup>-1</sup> Cd as 11.4 µg ml<sup>-1</sup> Cd(II) (RNAseq data)

| Gene           | Fold change | p-value | Gene             | Fold change | p-value |
|----------------|-------------|---------|------------------|-------------|---------|
| ZNF816-ZNF321P | -9.43       | 0.044   | BTN1A1           | -3.48       | 0.029   |
| MIR639         | -7.68       | 0.015   | MIR1914          | -3.46       | 0.028   |
| MIR6731        | -6.82       | 0.015   | CAPN11           | -3.44       | 0.019   |
| WISP1          | -6.36       | 0.018   | LRRC10B          | -3.42       | 0.039   |
| CH25H          | -6.00       | 0.047   | NPR1             | -3.41       | 0.010   |
| MIR6855        | -5.96       | 0.012   | TRIM55           | -3.41       | 0.020   |
| TNC            | -5.91       | 0.026   | PTGIR            | -3.40       | 0.015   |
| SPEG           | -5.90       | 0.042   | P2RY11           | -3.38       | 0.026   |
| LOC100130093   | -5.87       | 0.038   | FAM111B          | -3.36       | 0.012   |
| LINC00284      | -5.66       | 0.042   | TEAD4            | -3.36       | 0.020   |
| GPRASP2        | -5.57       | 0.031   | XKRX             | -3.33       | 0.016   |
| SERPINB2       | -5.55       | 0.027   | MIR579           | -3.32       | 0.024   |
| AWAT2          | -5.50       | 0.026   | STON1-GTF2A1L    | -3.32       | 0.027   |
| HK3            | -5.47       | 0.012   | STEAP2           | -3.31       | 0.024   |
| SLC1A2         | -5.41       | 0.016   | SNORD58A         | -3.31       | 0.033   |
| HNRNPA1L2      | -5.41       | 0.016   | PCDHGA11         | -3.29       | 0.014   |
| LIF            | -5.27       | 0.045   | FOXQ1            | -3.28       | 0.020   |
| CD1E           | -5.20       | 0.049   | ADAMTS8          | -3.28       | 0.040   |
| MIR7110        | -5.18       | 0.037   | SNORD57          | -3.28       | 0.037   |
| HIATL2         | -5.15       | 0.041   | GSDMC            | -3.25       | 0.046   |
| SCARNA4        | -5.00       | 0.041   | IGFBP3           | -3.25       | 0.028   |
| MIR568         | -4.90       | 0.045   | CRABP2           | -3.25       | 0.018   |
| MIR1204        | -4.83       | 0.026   | KCNK3            | -3.24       | 0.018   |
| MIR3934        | -4.82       | 0.020   | STAMBPL1         | -3.21       | 0.022   |
| FGL2           | -4.69       | 0.020   | TNFSF15          | -3.21       | 0.021   |
| MIR4500HG      | -4.67       | 0.019   | HSD17B8          | -3.21       | 0.046   |
| PTPN22         | -4.61       | 0.002   | ST7-OT3          | -3.18       | 0.023   |
| MIR4721        | -4.40       | 0.015   | SLC6A7           | -3.18       | 0.048   |
| RASL10A        | -4.36       | 0.016   | ATP1B4           | -3.17       | 0.021   |
| SNORD15A       | -4.31       | 0.040   | LINGO1           | -3.16       | 0.020   |
| OCSTAMP        | -4.30       | 0.044   | CACNA2D3         | -3.15       | 0.025   |
| ADRA2B         | -4.25       | 0.022   | PTGER2           | -3.14       | 0.032   |
| TP53RK         | -4.25       | 0.025   | MIR4312          | -3.13       | 0.047   |
| NRG2           | -4.24       | 0.013   | LOC400927-CSNK1E | -3.13       | 0.022   |
| SP6            | -4.16       | 0.018   | RAPH1            | -3.12       | 0.020   |
| SNORA56        | -4.13       | 0.029   | SLC6A12          | -3.12       | 0.036   |
| OTOF           | -4.09       | 0.017   | APLN             | -3.11       | 0.030   |
| CXCL11         | -4.08       | 0.047   | FAM217B          | -3.11       | 0.024   |
| CNTNAP1        | -4.02       | 0.036   | HIST1H2BJ        | -3.11       | 0.023   |
| MIR5088        | -3.96       | 0.023   | SLC39A2          | -3.10       | 0.013   |
| FAM24B-CUZD1   | -3.92       | 0.045   | MIR6769B         | -3.10       | 0.046   |
| TNF            | -3.90       | 0.005   | CHAMP1           | -3.09       | 0.044   |
| TGFB3          | -3.90       | 0.031   | TIE1             | -3.09       | 0.048   |
| SNORD103B      | -3.87       | 0.017   | LPPR4            | -3.06       | 0.034   |
| ADAM12         | -3.85       | 0.031   | RNF144B          | -3.06       | 0.038   |
| LOC100507424   | -3.83       | 0.049   | ERVMER34-1       | -3.06       | 0.018   |
| HMX2           | -3.80       | 0.014   | PRRX1            | -3.05       | 0.024   |
| LOC553103      | -3.80       | 0.027   | TBX21            | -3.05       | 0.047   |
| MIR6752        | -3.79       | 0.046   | MIR937           | -3.05       | 0.039   |
| NEK3           | -3.79       | 0.027   | FBP1             | -3.04       | 0.014   |
| AQP9           | -3.79       | 0.004   | TCAM1P           | -3.04       | 0.036   |
| MIR5187        | -3.73       | 0.017   | LRRC2            | -3.03       | 0.035   |
| VSNL1          | -3.72       | 0.014   | MSH5-SAPCD1      | -3.01       | 0.026   |
| CYP27B1        | -3.70       | 0.035   | BHLHE41          | -3.01       | 0.047   |
| LOC102723780   | -3.69       | 0.021   | PTK7             | -3.00       | 0.048   |
| SNORD110       | -3.69       | 0.038   | SCML2            | -3.00       | 0.031   |
| ST8SIA1        | -3.69       | 0.038   | PRKCQ-AS1        | -3.00       | 0.046   |
| DLL4           | -3.67       | 0.038   | NRSN1            | -2.99       | 0.035   |
| DLGAP3         | -3.62       | 0.032   | CSF1             | -2.99       | 0.048   |
| EREG           | -3.60       | 0.013   | STAC2            | -2.99       | 0.018   |
| SNORD49B       | -3.60       | 0.040   | ADAMTS5          | -2.99       | 0.027   |
| MIR6848        | -3.59       | 0.040   | PRSS23           | -2.97       | 0.016   |
| SNORD18B       | -3.55       | 0.013   | MIR8072          | -2.97       | 0.046   |
| WNT5A          | -3.54       | 0.034   | SLC35G5          | -2.96       | 0.050   |
| MIR658         | -3.54       | 0.020   | ENPP1            | -2.96       | 0.044   |
| PLS1           | -3.54       | 0.018   | COL4A5           | -2.96       | 0.039   |
| CXCL12         | -3.52       | 0.048   | THBD             | -2.96       | 0.015   |
| BIRC3          | -3.49       | 0.021   | STOX1            | -2.96       | 0.018   |
| CCL1           | -3.48       | 0.039   | CPA4             | -2.96       | 0.019   |

|                 |       |       |             |       |       |
|-----------------|-------|-------|-------------|-------|-------|
| HPDL            | -2.96 | 0.022 | IL1RN       | -2.62 | 0.048 |
| SLC30A3         | -2.94 | 0.050 | SNORD42A    | -2.61 | 0.024 |
| GSAP            | -2.93 | 0.047 | ITGA10      | -2.60 | 0.026 |
| MIR631          | -2.93 | 0.044 | MFSD4       | -2.60 | 0.012 |
| PHOSPHO2-KLHL23 | -2.93 | 0.025 | THY1        | -2.60 | 0.048 |
| TLR7            | -2.90 | 0.033 | CD1A        | -2.60 | 0.050 |
| HCP5            | -2.90 | 0.019 | S100A16     | -2.59 | 0.038 |
| SLC9A7P1        | -2.90 | 0.030 | GJB2        | -2.59 | 0.040 |
| SNORD46         | -2.89 | 0.001 | SNORD19     | -2.58 | 0.030 |
| MNX1            | -2.88 | 0.037 | LHX1        | -2.58 | 0.012 |
| HMX3            | -2.87 | 0.021 | RNU6-33P    | -2.58 | 0.011 |
| ATP1A2          | -2.86 | 0.017 | MME         | -2.57 | 0.028 |
| GCOM1           | -2.85 | 0.041 | TMEM178A    | -2.56 | 0.027 |
| TMEM9B          | -2.85 | 0.042 | NUAK2       | -2.56 | 0.025 |
| GOLGA2P5        | -2.85 | 0.038 | IL1B        | -2.56 | 0.049 |
| GREB1L          | -2.84 | 0.013 | SCOC-AS1    | -2.55 | 0.028 |
| STX16-NPEPL1    | -2.83 | 0.033 | MIR6764     | -2.55 | 0.022 |
| ASTN2           | -2.83 | 0.035 | CHRM5       | -2.55 | 0.037 |
| APCDD1L         | -2.83 | 0.049 | AVIL        | -2.55 | 0.017 |
| NOS2            | -2.83 | 0.042 | ARAP2       | -2.55 | 0.014 |
| FGD5            | -2.81 | 0.034 | SPATA32     | -2.55 | 0.030 |
| DACT1           | -2.81 | 0.050 | DEPDC1      | -2.54 | 0.021 |
| LRRK2           | -2.80 | 0.044 | ZNF662      | -2.54 | 0.039 |
| KCNA10          | -2.79 | 0.041 | FZD8        | -2.54 | 0.027 |
| RASGRP1         | -2.79 | 0.028 | ISLR        | -2.53 | 0.048 |
| PAM16           | -2.79 | 0.017 | SV2B        | -2.53 | 0.039 |
| CERS3           | -2.79 | 0.038 | FCAMR       | -2.53 | 0.020 |
| CD1C            | -2.79 | 0.040 | SCN1B       | -2.53 | 0.043 |
| LOC101927572    | -2.78 | 0.006 | PTPRG-AS1   | -2.53 | 0.015 |
| LRRC32          | -2.78 | 0.021 | SNORD33     | -2.53 | 0.039 |
| CXCL10          | -2.77 | 0.022 | UTS2R       | -2.52 | 0.031 |
| MMP15           | -2.77 | 0.026 | SCNN1A      | -2.52 | 0.031 |
| OLR1            | -2.76 | 0.024 | SNORD96A    | -2.52 | 0.025 |
| NOD2            | -2.76 | 0.030 | STC1        | -2.51 | 0.022 |
| CCND2           | -2.76 | 0.049 | CILP        | -2.50 | 0.049 |
| SLFNL1          | -2.75 | 0.038 | FCRLB       | -2.50 | 0.044 |
| SNORD69         | -2.75 | 0.012 | MIR4688     | -2.50 | 0.037 |
| MMP7            | -2.74 | 0.039 | GAPDHS      | -2.49 | 0.031 |
| LOXHD1          | -2.74 | 0.035 | TNFAIP8L3   | -2.49 | 0.015 |
| CD28            | -2.74 | 0.016 | METTL1      | -2.48 | 0.022 |
| SLC16A6         | -2.73 | 0.041 | DEK         | -2.48 | 0.035 |
| NEK10           | -2.73 | 0.030 | SPON1       | -2.47 | 0.011 |
| TRIM9           | -2.73 | 0.041 | CDCA7       | -2.47 | 0.023 |
| ELFN1-AS1       | -2.72 | 0.022 | MIR1229     | -2.47 | 0.031 |
| JPH2            | -2.72 | 0.024 | CASS4       | -2.46 | 0.018 |
| ANGPTL4         | -2.71 | 0.031 | CCL20       | -2.46 | 0.010 |
| SIM1            | -2.71 | 0.026 | IGF1R       | -2.46 | 0.045 |
| LOC100507600    | -2.70 | 0.027 | HYPK        | -2.45 | 0.036 |
| SMC1B           | -2.70 | 0.029 | CCNE2       | -2.45 | 0.039 |
| SNORA16B        | -2.70 | 0.045 | CARD10      | -2.45 | 0.032 |
| KCCAT211        | -2.70 | 0.025 | AMIGO1      | -2.45 | 0.048 |
| AADA2L2         | -2.70 | 0.047 | FAM13A-AS1  | -2.45 | 0.016 |
| IKZF2           | -2.70 | 0.035 | GLDN        | -2.44 | 0.033 |
| PCDH1           | -2.69 | 0.022 | RCAN3AS     | -2.43 | 0.045 |
| PRG2            | -2.68 | 0.021 | CD38        | -2.43 | 0.012 |
| ISM1            | -2.66 | 0.033 | CCDC171     | -2.43 | 0.014 |
| NPHP3-ACAD11    | -2.65 | 0.032 | ARMCX4      | -2.43 | 0.049 |
| PPIAL4A         | -2.65 | 0.042 | RHCE        | -2.42 | 0.018 |
| GAS1            | -2.65 | 0.011 | FCAR        | -2.41 | 0.017 |
| DGAT2           | -2.64 | 0.049 | KLHL4       | -2.41 | 0.039 |
| SNORD38A        | -2.64 | 0.039 | CYP26B1     | -2.41 | 0.017 |
| ZFP91-CNTF      | -2.64 | 0.032 | CYP19A1     | -2.41 | 0.035 |
| LRRC34          | -2.64 | 0.030 | SNORD116-21 | -2.40 | 0.027 |
| NCAPH           | -2.64 | 0.026 | BOC         | -2.40 | 0.024 |
| MIR7703         | -2.64 | 0.034 | LTB         | -2.39 | 0.035 |
| MIR3124         | -2.63 | 0.031 | LOC728743   | -2.38 | 0.048 |
| LOC90768        | -2.63 | 0.041 | CEP83-AS1   | -2.38 | 0.016 |
| PCDHGC5         | -2.63 | 0.049 | MIR7843     | -2.38 | 0.049 |
| LINC01125       | -2.62 | 0.013 | TGM3        | -2.38 | 0.011 |
| CD84            | -2.62 | 0.044 | ARHGEF33    | -2.38 | 0.025 |
| PIF1            | -2.62 | 0.019 | NDUFAF4P1   | -2.38 | 0.033 |
| SNORA9          | -2.62 | 0.026 | RBPM52      | -2.38 | 0.037 |

|              |       |       |                 |       |       |
|--------------|-------|-------|-----------------|-------|-------|
| LCTL         | -2.38 | 0.001 | ZNF540          | -2.19 | 0.037 |
| GPR19        | -2.37 | 0.040 | SMAD1           | -2.19 | 0.036 |
| TMEM139      | -2.37 | 0.048 | OR7E47P         | -2.19 | 0.029 |
| POU2F2       | -2.37 | 0.028 | PBK             | -2.18 | 0.021 |
| CHIT1        | -2.36 | 0.026 | KIF15           | -2.18 | 0.028 |
| CXCL5        | -2.36 | 0.042 | MIR8085         | -2.18 | 0.012 |
| STEAP1       | -2.36 | 0.032 | ACVR2A          | -2.18 | 0.029 |
| RASL11B      | -2.35 | 0.020 | C9orf116        | -2.18 | 0.024 |
| SNORA75      | -2.35 | 0.047 | TFAP2A          | -2.17 | 0.020 |
| SNCB         | -2.34 | 0.026 | FA2H            | -2.17 | 0.040 |
| SLC12A5      | -2.34 | 0.016 | SLC7A6          | -2.17 | 0.037 |
| OR2B6        | -2.33 | 0.031 | SSPN            | -2.17 | 0.014 |
| PSTPIP2      | -2.33 | 0.032 | SNORA7B         | -2.16 | 0.040 |
| CSPG5        | -2.33 | 0.033 | LRRC16A         | -2.16 | 0.030 |
| ZCCHC5       | -2.33 | 0.022 | CCL2            | -2.16 | 0.016 |
| ITGB8        | -2.33 | 0.033 | CCDC15          | -2.16 | 0.014 |
| LDLRAD4      | -2.33 | 0.040 | LRRC8B          | -2.15 | 0.039 |
| HYAL2        | -2.32 | 0.028 | GUSBP5          | -2.15 | 0.016 |
| CLDN9        | -2.32 | 0.012 | DMC1            | -2.15 | 0.041 |
| SEMA3A       | -2.32 | 0.018 | DBNDD2          | -2.15 | 0.023 |
| ASPM         | -2.32 | 0.049 | LOC728084       | -2.14 | 0.048 |
| FGF2         | -2.32 | 0.026 | MIR611          | -2.14 | 0.015 |
| MYRF         | -2.31 | 0.044 | KIAA0825        | -2.14 | 0.040 |
| ALMS1-IT1    | -2.31 | 0.033 | CCDC150         | -2.14 | 0.033 |
| CHRNA9       | -2.31 | 0.028 | AANAT           | -2.14 | 0.042 |
| AKTIP        | -2.31 | 0.011 | LINC01590       | -2.13 | 0.045 |
| MLK7-AS1     | -2.30 | 0.036 | PALM2-AKAP2     | -2.13 | 0.027 |
| FANCM        | -2.30 | 0.021 | PRRT3-AS1       | -2.13 | 0.029 |
| CDCA3        | -2.29 | 0.023 | WIPF3           | -2.13 | 0.044 |
| TMOD1        | -2.29 | 0.048 | RAP1GAP         | -2.13 | 0.044 |
| SOX13        | -2.29 | 0.032 | TNFAIP8L2-SCNM1 | -2.13 | 0.014 |
| LOC286059    | -2.28 | 0.039 | FCRLA           | -2.12 | 0.032 |
| SNORA26      | -2.28 | 0.012 | LOC100505666    | -2.12 | 0.015 |
| TUBB         | -2.28 | 0.027 | LRRC73          | -2.12 | 0.018 |
| LOC105372795 | -2.28 | 0.042 | ADAMTS1         | -2.12 | 0.044 |
| MYOZ2        | -2.28 | 0.045 | LINC00460       | -2.12 | 0.028 |
| CHST6        | -2.27 | 0.038 | LOC100132287    | -2.12 | 0.020 |
| CXCL13       | -2.27 | 0.047 | KCNG1           | -2.11 | 0.034 |
| KLRC4        | -2.26 | 0.048 | LINC01160       | -2.11 | 0.040 |
| LINC00964    | -2.26 | 0.024 | LOC100133315    | -2.11 | 0.040 |
| CKAP2L       | -2.26 | 0.047 | ENC1            | -2.11 | 0.028 |
| CENPE        | -2.26 | 0.040 | SHISA2          | -2.10 | 0.037 |
| GPC4         | -2.25 | 0.010 | PTGIS           | -2.10 | 0.034 |
| EPHA2        | -2.25 | 0.037 | GPM6B           | -2.10 | 0.014 |
| CD59         | -2.25 | 0.044 | SNORD49A        | -2.10 | 0.017 |
| E2F8         | -2.25 | 0.048 | SYTL1           | -2.10 | 0.029 |
| TM4SF1       | -2.25 | 0.031 | TM4SF20         | -2.10 | 0.024 |
| FBXO43       | -2.24 | 0.026 | SERF1A          | -2.09 | 0.019 |
| FAS          | -2.23 | 0.014 | SKA3            | -2.08 | 0.015 |
| SNORD32A     | -2.23 | 0.028 | FLT1            | -2.08 | 0.044 |
| ZNF724P      | -2.23 | 0.023 | ATP6V0E2-AS1    | -2.08 | 0.025 |
| SLAMF6       | -2.23 | 0.024 | ADGRG2          | -2.08 | 0.024 |
| TRIM54       | -2.23 | 0.031 | ZCCHC18         | -2.07 | 0.049 |
| SHC4         | -2.23 | 0.016 | DSCC1           | -2.07 | 0.023 |
| DDIAS        | -2.22 | 0.020 | LTBP2           | -2.07 | 0.020 |
| TRIM71       | -2.22 | 0.020 | HSPA12A         | -2.07 | 0.045 |
| ANKRD36B     | -2.22 | 0.030 | POLD4           | -2.07 | 0.041 |
| INHBA        | -2.22 | 0.043 | SNHG3           | -2.07 | 0.032 |
| SLC29A1      | -2.21 | 0.046 | KIAA1524        | -2.07 | 0.046 |
| RTN1         | -2.21 | 0.050 | ABCG1           | -2.07 | 0.037 |
| ITPKA        | -2.21 | 0.017 | TSNAX-DISC1     | -2.07 | 0.038 |
| NPR2         | -2.21 | 0.022 | CNGB1           | -2.06 | 0.015 |
| SEMA7A       | -2.21 | 0.029 | SNORA15         | -2.06 | 0.034 |
| ITGA3        | -2.21 | 0.030 | GNDF-AS1        | -2.06 | 0.039 |
| TRAPPC2      | -2.20 | 0.029 | KCTD6           | -2.06 | 0.015 |
| ARHGAP6      | -2.20 | 0.040 | PIP5K1B         | -2.06 | 0.033 |
| MRGPRF       | -2.20 | 0.027 | KIF23           | -2.06 | 0.016 |
| CAMK2A       | -2.20 | 0.023 | FER1L6          | -2.05 | 0.025 |
| HIST1H2AL    | -2.20 | 0.025 | CCNE1           | -2.05 | 0.050 |
| PSRC1        | -2.20 | 0.013 | ZFP69B          | -2.05 | 0.005 |
| TEX30        | -2.19 | 0.017 | CCDC102A        | -2.05 | 0.027 |
| ITGA2        | -2.19 | 0.015 | CCDC168         | -2.05 | 0.012 |

|            |       |       |              |       |       |
|------------|-------|-------|--------------|-------|-------|
| ESCO2      | -2.05 | 0.038 | FOXD3-AS1    | -2.04 | 0.044 |
| ARTN       | -2.05 | 0.042 | C17orf53     | -2.04 | 0.041 |
| FANCE      | -2.05 | 0.039 | SMCO2        | -2.04 | 0.031 |
| TMCC3      | -2.05 | 0.019 | TMPO-AS1     | -2.04 | 0.038 |
| CLDN11     | -2.05 | 0.046 | SRSF1        | -2.04 | 0.047 |
| LCNL1      | -2.05 | 0.030 | NADK2        | -2.04 | 0.036 |
| FAM64A     | -2.05 | 0.022 | GTSE1        | -2.04 | 0.010 |
| C9orf43    | -2.05 | 0.013 | SRPX         | -2.04 | 0.046 |
| SNORD50A   | -2.05 | 0.028 | GK5          | -2.04 | 0.034 |
| TNFSF14    | -2.05 | 0.023 | SLC10A5      | -2.04 | 0.032 |
| ZC2HC1A    | -2.05 | 0.012 | RAD54B       | -2.04 | 0.039 |
| SLC16A14   | -2.05 | 0.038 | SFXN2        | -2.04 | 0.018 |
| BOK        | -2.05 | 0.029 | WDR89        | -2.04 | 0.028 |
| ANKRD31    | -2.05 | 0.050 | KDELC2       | -2.04 | 0.011 |
| SSC5D      | -2.05 | 0.047 | TP53         | -2.04 | 0.038 |
| TBX6       | -2.05 | 0.012 | ACTA2        | -2.04 | 0.021 |
| MRPL39     | -2.05 | 0.025 | TTK          | -2.04 | 0.031 |
| DZIP1L     | -2.05 | 0.041 | RSPH1        | -2.04 | 0.043 |
| TCEA1      | -2.05 | 0.039 | BAALC-AS1    | -2.04 | 0.016 |
| TMCC1-AS1  | -2.05 | 0.037 | RIBC2        | -2.04 | 0.017 |
| CLSPN      | -2.05 | 0.039 | ANKRD66      | -2.03 | 0.018 |
| PSMB8-AS1  | -2.05 | 0.045 | BCAR1        | -2.03 | 0.021 |
| NUF2       | -2.05 | 0.032 | KIF11        | -2.03 | 0.039 |
| KRT17P5    | -2.04 | 0.047 | P3H2         | -2.03 | 0.040 |
| PIK3CD-AS1 | -2.04 | 0.031 | B4GALT2      | -2.03 | 0.029 |
| AUNIP      | -2.04 | 0.034 | STMN1        | -2.03 | 0.029 |
| P2RY14     | -2.04 | 0.016 | MED31        | -2.03 | 0.046 |
| P4HA3      | -2.04 | 0.017 | GABBR2       | -2.03 | 0.050 |
| TOE1       | -2.04 | 0.030 | TBC1D24      | -2.03 | 0.025 |
| IGFN1      | -2.04 | 0.035 | LOC100289511 | -2.03 | 0.031 |
| STRA6      | -2.04 | 0.010 | ICAM5        | -2.03 | 0.048 |
| KIAA1210   | -2.04 | 0.042 | ANXA8L1      | -2.03 | 0.014 |
| IRF2BPL    | -2.04 | 0.033 | ANKRD36      | -2.03 | 0.024 |
| SGOL2      | -2.04 | 0.023 | MEGF6        | -2.03 | 0.041 |
| BLM        | -2.04 | 0.044 | NOC3L        | -2.03 | 0.016 |
| ANKLE1     | -2.04 | 0.031 | L2HGDH       | -2.03 | 0.035 |
| TYRO3P     | -2.04 | 0.023 | EEF1E1       | -2.03 | 0.018 |
| NTSR1      | -2.04 | 0.039 | URB1         | -2.03 | 0.043 |
| HTR1F      | -2.04 | 0.016 | YY2          | -2.03 | 0.017 |
| TNFAIP8    | -2.04 | 0.045 | RHOV         | -2.03 | 0.041 |
| TRAF1      | -2.04 | 0.017 | TLE1         | -2.03 | 0.049 |
| GLIPR1L1   | -2.04 | 0.021 | RACGAP1P     | -2.03 | 0.032 |
| NOP16      | -2.04 | 0.041 | H19          | -2.03 | 0.039 |
| CDC25C     | -2.04 | 0.030 | TSEN2        | -2.03 | 0.031 |
| LENG9      | -2.04 | 0.029 | HTR2A        | -2.03 | 0.012 |
| NPPC       | -2.04 | 0.008 | CDA          | -2.03 | 0.029 |
| BCL3       | -2.04 | 0.031 | LTB4R        | -2.03 | 0.036 |
| SCO2       | -2.04 | 0.025 | TMEM177      | -2.03 | 0.039 |
| ALDH1A2    | -2.04 | 0.037 | HEATR4       | -2.03 | 0.046 |
| BPI        | -2.04 | 0.034 | LPL          | -2.03 | 0.045 |
| GALNT3     | -2.04 | 0.008 | CASC15       | -2.03 | 0.023 |
| IGDCC4     | -2.04 | 0.032 | RAD18        | -2.03 | 0.037 |
| GPR141     | -2.04 | 0.020 | ANGEL1       | -2.03 | 0.030 |
| SLC25A22   | -2.04 | 0.036 | UNG          | -2.03 | 0.022 |
| KIF20A     | -2.04 | 0.045 | MCM3         | -2.03 | 0.023 |
| CCDC27     | -2.04 | 0.026 | DMRT2        | -2.03 | 0.026 |
| CCL7       | -2.04 | 0.013 | ABCA5        | -2.03 | 0.024 |
| DNMT3B     | -2.04 | 0.027 | SLBP         | -2.03 | 0.026 |
| MYO1B      | -2.04 | 0.044 | FANCA        | -2.03 | 0.041 |
| CECR2      | -2.04 | 0.031 | VASH2        | -2.03 | 0.047 |
| NCAPG      | -2.04 | 0.020 | MIR940       | -2.03 | 0.049 |
| CYP51A1    | -2.04 | 0.049 | LONRF1       | -2.03 | 0.041 |
| DYRK4      | -2.04 | 0.040 | LINC01107    | -2.03 | 0.016 |
| NOTCH3     | -2.04 | 0.013 | GBX2         | -2.03 | 0.039 |
| TRAF3IP2   | -2.04 | 0.011 | PAPL         | -2.03 | 0.013 |
| MIR4284    | -2.04 | 0.034 | RPUSD2       | -2.03 | 0.046 |
| ADAMTS9    | -2.04 | 0.010 | KIF2C        | -2.03 | 0.041 |
| KCNA2      | -2.04 | 0.049 | SEMA4A       | -2.03 | 0.027 |
| KIF18B     | -2.04 | 0.025 | TMOD4        | -2.03 | 0.043 |
| C1orf220   | -2.04 | 0.042 | C16orf59     | -2.03 | 0.032 |
| FBN1       | -2.04 | 0.043 | NEK2         | -2.03 | 0.050 |
| RELB       | -2.04 | 0.048 | RRM2         | -2.03 | 0.044 |

|              |       |       |              |       |       |
|--------------|-------|-------|--------------|-------|-------|
| HDDC3        | -2.03 | 0.023 | MIR6793      | -2.02 | 0.019 |
| SUV39H2      | -2.03 | 0.047 | SNX15        | -2.02 | 0.013 |
| PPAN         | -2.03 | 0.034 | TBC1D4       | -2.02 | 0.027 |
| MELK         | -2.03 | 0.040 | CDC48        | -2.02 | 0.024 |
| P2RX5        | -2.03 | 0.039 | HS3ST3B1     | -2.02 | 0.017 |
| TLCD1        | -2.03 | 0.032 | SHROOM2      | -2.02 | 0.016 |
| TMEM52B      | -2.03 | 0.043 | CDC45        | -2.02 | 0.043 |
| CAPRIN2      | -2.03 | 0.041 | HOXA4        | -2.02 | 0.045 |
| ANKRD26      | -2.03 | 0.034 | MIR503HG     | -2.02 | 0.020 |
| ICAM1        | -2.03 | 0.047 | FANCB        | -2.02 | 0.025 |
| TPTEP1       | -2.03 | 0.035 | KCNJ15       | -2.02 | 0.036 |
| S100A9       | -2.03 | 0.006 | TEAD3        | -2.02 | 0.035 |
| RACGAP1      | -2.03 | 0.020 | CRACR2B      | -2.02 | 0.049 |
| CBLN3        | -2.03 | 0.040 | C2orf40      | -2.02 | 0.019 |
| GJC1         | -2.03 | 0.021 | PLK1         | -2.02 | 0.017 |
| MAK16        | -2.03 | 0.013 | KIAA0020     | -2.02 | 0.044 |
| PPT2-EGFL8   | -2.03 | 0.041 | PBX4         | -2.02 | 0.011 |
| RDM1         | -2.03 | 0.021 | HCAR1        | -2.02 | 0.025 |
| PFN4         | -2.03 | 0.026 | FBXW4P1      | -2.02 | 0.041 |
| UCK2         | -2.03 | 0.012 | GSG1L        | -2.02 | 0.049 |
| C2orf48      | -2.03 | 0.045 | UNC13A       | -2.02 | 0.024 |
| PIP5K1P1     | -2.03 | 0.044 | RNF126P1     | -2.02 | 0.028 |
| ZNF239       | -2.03 | 0.034 | NANOS1       | -2.02 | 0.026 |
| LOC101929767 | -2.03 | 0.018 | TMEM233      | -2.02 | 0.035 |
| FGD1         | -2.03 | 0.026 | LOC400684    | -2.02 | 0.041 |
| RASSF8       | -2.03 | 0.030 | LRRC46       | -2.02 | 0.025 |
| ARHGAP23     | -2.02 | 0.039 | KIAA1211L    | -2.02 | 0.019 |
| APITD1       | -2.02 | 0.038 | CHAF1A       | -2.02 | 0.034 |
| MST1P2       | -2.02 | 0.023 | FRS3         | -2.02 | 0.027 |
| TGM2         | -2.02 | 0.025 | C3orf70      | -2.02 | 0.029 |
| MIR553       | -2.02 | 0.044 | GJA5         | -2.02 | 0.019 |
| KIF24        | -2.02 | 0.050 | KIF20B       | -2.02 | 0.031 |
| GIN52        | -2.02 | 0.047 | SUCLG2-AS1   | -2.02 | 0.012 |
| CXCR6        | -2.02 | 0.038 | TPM3         | -2.02 | 0.024 |
| TPBGL        | -2.02 | 0.049 | LOC101927379 | -2.02 | 0.024 |
| THG1L        | -2.02 | 0.023 | EXOSC9       | -2.02 | 0.000 |
| ELOVL2       | -2.02 | 0.020 | B4GAT1       | -2.02 | 0.040 |
| IL32         | -2.02 | 0.033 | PSTK         | -2.02 | 0.029 |
| LIN9         | -2.02 | 0.040 | NR2C2AP      | -2.02 | 0.047 |
| DOCK3        | -2.02 | 0.012 | MIR4444-1    | -2.02 | 0.013 |
| RNF207       | -2.02 | 0.025 | PLK4         | -2.02 | 0.013 |
| VPS9D1-AS1   | -2.02 | 0.046 | FOLR3        | -2.02 | 0.028 |
| MYH10        | -2.02 | 0.048 | SNTB2        | -2.02 | 0.015 |
| HS3ST1       | -2.02 | 0.041 | CLEC1A       | -2.02 | 0.028 |
| ARMCX1       | -2.02 | 0.022 | PODXL        | -2.02 | 0.036 |
| FAM81A       | -2.02 | 0.050 | LTA          | -2.02 | 0.045 |
| SNORA22      | -2.02 | 0.039 | POLD3        | -2.02 | 0.022 |
| SNORA62      | -2.02 | 0.022 | SYPL2        | -2.02 | 0.021 |
| CPNE6        | -2.02 | 0.026 | FAHD2CP      | -2.02 | 0.026 |
| DTX4         | -2.02 | 0.037 | USP2         | -2.01 | 0.033 |
| ZNF367       | -2.02 | 0.034 | MEX3B        | -2.01 | 0.017 |
| C1orf53      | -2.02 | 0.044 | RSAD1        | -2.01 | 0.015 |
| PUS1         | -2.02 | 0.031 | CARD9        | -2.01 | 0.027 |
| SLC25A23     | -2.02 | 0.013 | LY75         | -2.01 | 0.028 |
| INO80C       | -2.02 | 0.045 | SNORA66      | -2.01 | 0.048 |
| CENPN        | -2.02 | 0.023 | SUV39H1      | -2.01 | 0.017 |
| ZNF833P      | -2.02 | 0.011 | RBM14-RBM4   | -2.01 | 0.040 |
| MIR6869      | -2.02 | 0.049 | HP           | -2.01 | 0.010 |
| SNORD1A      | -2.02 | 0.045 | EZH2         | -2.01 | 0.035 |
| TIAM1        | -2.02 | 0.011 | SLC5A3       | -2.01 | 0.033 |
| MMP19        | -2.02 | 0.026 | SLC4A4       | -2.01 | 0.018 |
| FAM212B      | -2.02 | 0.026 | NRP2         | -2.01 | 0.023 |
| EPHA1        | -2.02 | 0.035 | SPC25        | -2.01 | 0.048 |
| CLDND1       | -2.02 | 0.034 | RFC3         | -2.01 | 0.036 |
| PCAT6        | -2.02 | 0.040 | LRRC20       | -2.01 | 0.036 |
| MINA         | -2.02 | 0.013 | SNORD21      | -2.01 | 0.015 |
| ZNF485       | -2.02 | 0.024 | DLGAP5       | -2.01 | 0.010 |
| NARS2        | -2.02 | 0.027 | KIF4B        | -2.01 | 0.027 |
| TROAP        | -2.02 | 0.050 | ZNF488       | -2.01 | 0.024 |
| DCAF4        | -2.02 | 0.021 | MIR4444-2    | -2.01 | 0.012 |
| MRPS31P5     | -2.02 | 0.031 | S1PR5        | -2.01 | 0.011 |
| MXD3         | -2.02 | 0.016 | KLHL35       | -2.01 | 0.031 |

|               |       |       |              |       |       |
|---------------|-------|-------|--------------|-------|-------|
| RBBP8         | -2.01 | 0.018 | FKBP11       | -2.01 | 0.032 |
| HIST1H2AM     | -2.01 | 0.049 | CRHR2        | -2.01 | 0.014 |
| ZGRF1         | -2.01 | 0.046 | PRSS22       | -2.01 | 0.030 |
| UBIAD1        | -2.01 | 0.045 | GPD1         | -2.01 | 0.029 |
| SHISA5        | -2.01 | 0.013 | CFAP45       | -2.01 | 0.042 |
| MIR6785       | -2.01 | 0.033 | POC1B-GALNT4 | -2.01 | 0.011 |
| MIS18A        | -2.01 | 0.050 | BUB1B        | -2.01 | 0.040 |
| SSX2IP        | -2.01 | 0.049 | SLC37A1      | -2.01 | 0.013 |
| FNTB          | -2.01 | 0.026 | TWIST2       | -2.01 | 0.039 |
| KCNH4         | -2.01 | 0.016 | SLC6A9       | -2.01 | 0.044 |
| CXCL3         | -2.01 | 0.021 | VSIG2        | -2.01 | 0.039 |
| CCDC34        | -2.01 | 0.013 | SNORA81      | -2.01 | 0.015 |
| CRMP1         | -2.01 | 0.016 | SMTN         | -2.01 | 0.018 |
| WT1           | -2.01 | 0.015 | IRG1         | -2.01 | 0.025 |
| MRM1          | -2.01 | 0.019 | FAM212B-AS1  | -2.01 | 0.045 |
| PDPN          | -2.01 | 0.031 | RECQL4       | -2.01 | 0.027 |
| CARNS1        | -2.01 | 0.031 | BRCA1        | -2.01 | 0.027 |
| SEN3P3-EIF4A1 | -2.01 | 0.028 | ADAMTS7P1    | -2.01 | 0.035 |
| LYNX1         | -2.01 | 0.011 | WDR76        | -2.01 | 0.024 |
| ERCC6L        | -2.01 | 0.016 | LOC102723824 | -2.01 | 0.034 |
| TMEM107       | -2.01 | 0.018 | SNORD83A     | -2.01 | 0.048 |
| APOA2         | -2.01 | 0.049 | CXCL1        | -2.01 | 0.014 |
| MAST4         | -2.01 | 0.012 | SLC16A9      | -2.01 | 0.023 |
| ATP6V1G2      | -2.01 | 0.046 | ACAT2        | -2.01 | 0.041 |
| AMD1          | -2.01 | 0.031 | RUFY2        | -2.01 | 0.042 |
| APITD1-CORT   | -2.01 | 0.026 | SLC27A3      | -2.01 | 0.039 |
| KAZN          | -2.01 | 0.041 | CLVS1        | -2.01 | 0.038 |
| ZFP92         | -2.01 | 0.022 | SEC24B-AS1   | -2.01 | 0.038 |
| HELLS         | -2.01 | 0.028 | CYP2R1       | -2.01 | 0.027 |
| TIPIN         | -2.01 | 0.022 | DCBLD2       | -2.01 | 0.028 |
| SNORA45B      | -2.01 | 0.046 | TUBE1        | -2.01 | 0.013 |
| MIR221        | -2.01 | 0.036 | PLAU         | -2.01 | 0.019 |
| SNORA45A      | -2.01 | 0.003 | RASA1        | -2.01 | 0.021 |
| DNA2          | -2.01 | 0.026 | RAC2         | -2.01 | 0.034 |
| LOC105378732  | -2.01 | 0.026 | AOX1         | -2.01 | 0.015 |
| TMCC2         | -2.01 | 0.032 | LOC100507065 | -2.01 | 0.043 |
| ADPGK-AS1     | -2.01 | 0.038 | HRH2         | -2.01 | 0.018 |
| ECE1          | -2.01 | 0.040 | MCM8         | -2.01 | 0.035 |
| COL5A3        | -2.01 | 0.028 | CCL4         | -2.01 | 0.030 |
| LFNG          | -2.01 | 0.028 | TNS2         | -2.01 | 0.040 |
| CEP83         | -2.01 | 0.043 | RCCD1        | -2.01 | 0.028 |
| MIR3917       | -2.01 | 0.028 | INCENP       | -2.01 | 0.029 |
| LSM4          | -2.01 | 0.045 | HIST1H3E     | -2.01 | 0.012 |
| AOC3          | -2.01 | 0.012 | CDCA2        | -2.01 | 0.047 |
| AURKA         | -2.01 | 0.022 | ABCA1        | -2.01 | 0.021 |
| ATF5          | -2.01 | 0.017 | C19orf57     | -2.01 | 0.010 |
| DCUN1D4       | -2.01 | 0.042 | PTPN2        | -2.01 | 0.029 |
| MIR4724       | -2.01 | 0.039 | ZNF619       | -2.01 | 0.049 |
| PPL           | -2.01 | 0.045 | FGR          | -2.01 | 0.019 |
| PALM2         | -2.01 | 0.011 | NIFK-AS1     | -2.01 | 0.010 |
| SV2A          | -2.01 | 0.012 | EXO1         | -2.01 | 0.047 |
| SIX1          | -2.01 | 0.016 | DNAJB5       | -2.01 | 0.020 |
| SYP           | -2.01 | 0.027 | PARP2        | -2.01 | 0.042 |
| PRR22         | -2.01 | 0.024 | CDC42BPA     | -2.01 | 0.035 |
| PAQR5         | -2.01 | 0.012 | SOX1         | -2.01 | 0.035 |
| STARD4-AS1    | -2.01 | 0.022 | SNORD125     | -2.01 | 0.014 |
| FBXO5         | -2.01 | 0.035 | PKI55        | -2.00 | 0.044 |
| RGMB          | -2.01 | 0.017 | ESF1         | -2.00 | 0.016 |
| TMEM231       | -2.01 | 0.032 | HMMR         | -2.00 | 0.018 |
| TAS2R19       | -2.01 | 0.017 | MNS1         | -2.00 | 0.042 |
| SLC16A1-AS1   | -2.01 | 0.019 | SNORD91B     | -2.00 | 0.039 |
| INHBB         | -2.01 | 0.044 | LOC55338     | -2.00 | 0.029 |
| RNF180        | -2.01 | 0.017 | CCNA2        | -2.00 | 0.042 |
| MIR1178       | -2.01 | 0.017 | ACTR3B       | -2.00 | 0.035 |
| AKAP5         | -2.01 | 0.036 | PCSK5        | -2.00 | 0.012 |
| CDH18         | -2.01 | 0.013 | HOXA3        | -2.00 | 0.040 |
| FAM111A       | -2.01 | 0.012 | MCM10        | -2.00 | 0.019 |
| SNORA21       | -2.01 | 0.022 | FBF1         | -2.00 | 0.046 |
| RGS7BP        | -2.01 | 0.042 | TMCO6        | -2.00 | 0.015 |
| CDV3          | -2.01 | 0.003 | ANO8         | -2.00 | 0.018 |
| GSG2          | -2.01 | 0.033 | MND1         | -2.00 | 0.024 |
| SPATA18       | -2.01 | 0.033 | ATAD2        | -2.00 | 0.026 |

|            |       |       |              |       |       |
|------------|-------|-------|--------------|-------|-------|
| GALNT12    | -2.00 | 0.045 | GNGT2        | -2.00 | 0.031 |
| LONRF2     | -2.00 | 0.019 | THEM6        | -2.00 | 0.042 |
| SLC16A8    | -2.00 | 0.028 | POLE2        | -2.00 | 0.045 |
| CDC25A     | -2.00 | 0.014 | ARHGAP44     | -2.00 | 0.011 |
| XRCC2      | -2.00 | 0.026 | LRFN5        | -2.00 | 0.013 |
| SPRYD7     | -2.00 | 0.040 | C12orf60     | -2.00 | 0.027 |
| MYCBP      | -2.00 | 0.031 | DMXL2        | -2.00 | 0.025 |
| LRRC37A8P  | -2.00 | 0.024 | CFAP69       | -2.00 | 0.011 |
| SH3RF2     | -2.00 | 0.014 | SCN4A        | -2.00 | 0.047 |
| SNORD2     | -2.00 | 0.001 | SLC35G6      | -2.00 | 0.021 |
| AREG       | -2.00 | 0.020 | PI3          | -2.00 | 0.018 |
| CENPI      | -2.00 | 0.023 | UHRF1        | -2.00 | 0.010 |
| MRPS27     | -2.00 | 0.031 | RFC4         | -2.00 | 0.022 |
| IL33       | -2.00 | 0.028 | ADAT2        | -2.00 | 0.013 |
| RWDD2B     | -2.00 | 0.040 | CHGB         | -2.00 | 0.038 |
| FAM86EP    | -2.00 | 0.043 | PUS7         | -2.00 | 0.041 |
| PPP2R5E    | -2.00 | 0.029 | MIR6857      | -2.00 | 0.038 |
| MYCBPAP    | -2.00 | 0.041 | LOC101927229 | -2.00 | 0.038 |
| MIR6844    | -2.00 | 0.024 | LOC388282    | -2.00 | 0.032 |
| CCNF       | -2.00 | 0.041 | SOWAHA       | -2.00 | 0.015 |
| SLC29A2    | -2.00 | 0.015 | TIFAB        | -2.00 | 0.013 |
| NOXRED1    | -2.00 | 0.023 | KIF18A       | -2.00 | 0.028 |
| LINC01230  | -2.00 | 0.047 | BDKRB2       | -2.00 | 0.038 |
| WDR62      | -2.00 | 0.027 | ARPIN        | -2.00 | 0.038 |
| GABRA4     | -2.00 | 0.001 | PPP2R3B      | -2.00 | 0.038 |
| MAD2L1     | -2.00 | 0.025 | TMEM254-AS1  | -2.00 | 0.019 |
| GTPBP3     | -2.00 | 0.037 | MFSD2A       | -2.00 | 0.029 |
| LHFPL1     | -2.00 | 0.008 | CEP152       | -2.00 | 0.042 |
| MTHFD1L    | -2.00 | 0.011 | STIL         | -2.00 | 0.034 |
| ERLIN1     | -2.00 | 0.013 | NRG4         | -2.00 | 0.040 |
| SHISA3     | -2.00 | 0.028 | CDC6         | -2.00 | 0.010 |
| DGUOK-AS1  | -2.00 | 0.031 | ADAM19       | -2.00 | 0.027 |
| ABI3       | -2.00 | 0.041 | ENPP2        | -2.00 | 0.018 |
| ITK        | -2.00 | 0.048 | LOC102606465 | -2.00 | 0.038 |
| CCDC73     | -2.00 | 0.027 | C21orf58     | -2.00 | 0.011 |
| NRIP3      | -2.00 | 0.036 | MGC12916     | -2.00 | 0.037 |
| ZNF337-AS1 | -2.00 | 0.029 | TRPC5        | -2.00 | 0.042 |
| SLC20A1    | -2.00 | 0.025 | CXorf57      | -2.00 | 0.020 |
| UBL4B      | -2.00 | 0.031 | RASL12       | -2.00 | 0.013 |
| TMEM30B    | -2.00 | 0.024 | MKI67        | -2.00 | 0.002 |
| JAG1       | -2.00 | 0.033 | NDC80        | -2.00 | 0.021 |
| KIF14      | -2.00 | 0.039 | PTGDR2       | -2.00 | 0.021 |
| ADGRG1     | -2.00 | 0.049 | LZTS3        | -2.00 | 0.033 |
| CCNB1      | -2.00 | 0.039 | TDRKH        | -2.00 | 0.017 |
| MEIOB      | -2.00 | 0.006 | ORMDL1       | -2.00 | 0.046 |
| SLC25A4    | -2.00 | 0.038 | LINC00965    | -2.00 | 0.020 |
| ANKRD11    | -2.00 | 0.026 | CDC7         | -2.00 | 0.016 |
| TRIP13     | -2.00 | 0.050 | SCARNA7      | -2.00 | 0.017 |
| CSPG4      | -2.00 | 0.026 | C1QL1        | -2.00 | 0.026 |
| NFKB2      | -2.00 | 0.022 | GIN51        | -2.00 | 0.034 |
| ANKFY1     | -2.00 | 0.022 | TCF7L2       | -2.00 | 0.013 |
| ANK2       | -2.00 | 0.042 | C3orf52      | -2.00 | 0.031 |
| LINC01266  | -2.00 | 0.028 | EML6         | -2.00 | 0.012 |
| XK         | -2.00 | 0.020 | ORC1         | -2.00 | 0.043 |
| FLVCR1     | -2.00 | 0.040 | ATAD5        | -2.00 | 0.016 |
| SACS       | -2.00 | 0.046 | MIR4741      | -2.00 | 0.015 |
| RPS6KL1    | -2.00 | 0.029 | RNF128       | -2.00 | 0.027 |
| CHTF18     | -2.00 | 0.049 | LILRA1       | -2.00 | 0.042 |
| MIR711     | -2.00 | 0.026 | FAM65B       | -2.00 | 0.041 |
| CCDC28B    | -2.00 | 0.044 | SLC25A10     | -2.00 | 0.037 |
| PGAP1      | -2.00 | 0.011 | SCML4        | -2.00 | 0.020 |
| C17orf96   | -2.00 | 0.042 | MPV17L       | -2.00 | 0.012 |
| MIR4324    | -2.00 | 0.026 | VSIG4        | -2.00 | 0.012 |
| NR1H3      | -2.00 | 0.014 | MIR4683      | -2.00 | 0.028 |
| PPRC1      | -2.00 | 0.027 | POLQ         | -2.00 | 0.047 |
| CDC20      | -2.00 | 0.023 | GCNT4        | -2.00 | 0.042 |
| SLCO4C1    | -2.00 | 0.018 | CASC5        | -2.00 | 0.015 |
| CLCF1      | -2.00 | 0.029 | P2RY2        | -2.00 | 0.018 |
| GFOD1      | -2.00 | 0.017 | ZNF726       | -2.00 | 0.014 |
| C17orf49   | -2.00 | 0.050 | MTFR2        | -2.00 | 0.044 |
| LOXL4      | -2.00 | 0.015 | PITX1        | -2.00 | 0.036 |
| GPR68      | -2.00 | 0.027 | TEX15        | -2.00 | 0.039 |

|              |       |       |               |      |       |
|--------------|-------|-------|---------------|------|-------|
| SDC1         | -2.00 | 0.029 | BCL2          | 2.00 | 0.028 |
| CDC42EP1     | -2.00 | 0.015 | GPR143        | 2.00 | 0.026 |
| CEP55        | -2.00 | 0.012 | DBNDD1        | 2.00 | 0.041 |
| SYNE2        | -2.00 | 0.019 | STOX2         | 2.00 | 0.019 |
| H2AFY2       | -2.00 | 0.018 | SOGA3         | 2.00 | 0.020 |
| RAD54L       | -2.00 | 0.047 | RASGRP2       | 2.00 | 0.001 |
| NXT1         | -2.00 | 0.035 | MIR1909       | 2.00 | 0.019 |
| SFMBT1       | -2.00 | 0.005 | HMCN1         | 2.00 | 0.039 |
| ALDH2        | 2.00  | 0.017 | NKX2-4        | 2.00 | 0.020 |
| ADORA2B      | 2.00  | 0.035 | LIMS2         | 2.00 | 0.049 |
| LOC100130744 | 2.00  | 0.031 | LDHAL6B       | 2.00 | 0.039 |
| STON2        | 2.00  | 0.045 | PEX5L         | 2.00 | 0.034 |
| LOC102503427 | 2.00  | 0.032 | TBX2-AS1      | 2.00 | 0.020 |
| PCSK6        | 2.00  | 0.017 | CRYZ          | 2.00 | 0.044 |
| TRPA1        | 2.00  | 0.015 | PPP1R1C       | 2.00 | 0.028 |
| MIR210HG     | 2.00  | 0.008 | CIR1          | 2.00 | 0.048 |
| MIR6876      | 2.00  | 0.025 | FTL           | 2.00 | 0.043 |
| SOX30        | 2.00  | 0.041 | DFNB59        | 2.00 | 0.042 |
| LINC01354    | 2.00  | 0.037 | CLEC2B        | 2.00 | 0.027 |
| LOC100130899 | 2.00  | 0.047 | MIR5193       | 2.00 | 0.038 |
| BAIAP3       | 2.00  | 0.026 | SUGCT         | 2.00 | 0.010 |
| ITPKB-IT1    | 2.00  | 0.037 | TALDO1        | 2.00 | 0.037 |
| NMB          | 2.00  | 0.036 | LOC154761     | 2.00 | 0.013 |
| MIR6817      | 2.00  | 0.004 | GALNT9        | 2.00 | 0.030 |
| MTURN        | 2.00  | 0.025 | MIR27A        | 2.00 | 0.020 |
| LCA5         | 2.00  | 0.003 | PCDHGB6       | 2.00 | 0.042 |
| GSR          | 2.00  | 0.018 | LINC01291     | 2.00 | 0.036 |
| FLJ12825     | 2.00  | 0.013 | KCNK2         | 2.00 | 0.036 |
| CFAP43       | 2.00  | 0.016 | MIR6746       | 2.00 | 0.045 |
| TREML2       | 2.00  | 0.044 | TUFT1         | 2.00 | 0.042 |
| FAM227B      | 2.00  | 0.038 | LOC101927740  | 2.00 | 0.011 |
| PLAC4        | 2.00  | 0.025 | GPC6          | 2.00 | 0.044 |
| NKAIN2       | 2.00  | 0.046 | INSM2         | 2.00 | 0.037 |
| KIF26A       | 2.00  | 0.039 | PPP5D1        | 2.00 | 0.031 |
| ARL17B       | 2.00  | 0.046 | F8            | 2.00 | 0.024 |
| ZNF844       | 2.00  | 0.011 | LOC100506476  | 2.00 | 0.048 |
| FABP3        | 2.00  | 0.034 | C17orf64      | 2.00 | 0.013 |
| DNAJC3-AS1   | 2.00  | 0.014 | LOC101928894  | 2.00 | 0.033 |
| EEF1A2       | 2.00  | 0.047 | GLRX          | 2.00 | 0.015 |
| ZRANB2-AS2   | 2.00  | 0.020 | LOC101927851  | 2.00 | 0.028 |
| LOC101929710 | 2.00  | 0.048 | SRGAP3        | 2.00 | 0.039 |
| LINC01279    | 2.00  | 0.021 | ZNF670-ZNF695 | 2.00 | 0.047 |
| ROPN1L       | 2.00  | 0.043 | SPAG5-AS1     | 2.01 | 0.023 |
| CTGF         | 2.00  | 0.043 | CLIP4         | 2.01 | 0.045 |
| KLHL24       | 2.00  | 0.031 | GRAMD1C       | 2.01 | 0.033 |
| UG0898H09    | 2.00  | 0.023 | SRL           | 2.01 | 0.034 |
| C10orf35     | 2.00  | 0.031 | SEPT4         | 2.01 | 0.041 |
| MIR3607      | 2.00  | 0.036 | MGC16275      | 2.01 | 0.030 |
| PPAP2C       | 2.00  | 0.047 | PMEL          | 2.01 | 0.047 |
| LOC100507156 | 2.00  | 0.029 | BCL11A        | 2.01 | 0.042 |
| ANKRD10      | 2.00  | 0.018 | DBH-AS1       | 2.01 | 0.010 |
| PDE4DIP      | 2.00  | 0.031 | PLS3-AS1      | 2.01 | 0.012 |
| HGF          | 2.00  | 0.036 | LRP1B         | 2.01 | 0.038 |
| SULT1A4      | 2.00  | 0.040 | CES1          | 2.01 | 0.014 |
| INADL        | 2.00  | 0.023 | LOC100129203  | 2.01 | 0.050 |
| KANSL1-AS1   | 2.00  | 0.039 | RTCA-AS1      | 2.01 | 0.003 |
| RHBDD2       | 2.00  | 0.013 | MIR6881       | 2.01 | 0.022 |
| PRCAT47      | 2.00  | 0.037 | ATP6V1C2      | 2.01 | 0.047 |
| CDH17        | 2.00  | 0.039 | LOC90246      | 2.01 | 0.048 |
| SCARNA2      | 2.00  | 0.022 | OSER1-AS1     | 2.01 | 0.032 |
| BAG3         | 2.00  | 0.013 | CILP2         | 2.01 | 0.035 |
| VWA5A        | 2.00  | 0.048 | BAIAP2L1      | 2.01 | 0.047 |
| PCDHB18P     | 2.00  | 0.010 | LOC101060091  | 2.01 | 0.017 |
| HCN2         | 2.00  | 0.039 | RUNDC3B       | 2.01 | 0.046 |
| CASP5        | 2.00  | 0.035 | SLC2A1-AS1    | 2.01 | 0.020 |
| LRRC15       | 2.00  | 0.037 | ADCY10P1      | 2.01 | 0.046 |
| DNAJC27-AS1  | 2.00  | 0.042 | FRMPD2B       | 2.01 | 0.032 |
| LOC730202    | 2.00  | 0.042 | PCAT7         | 2.01 | 0.037 |
| LENG8-AS1    | 2.00  | 0.013 | RNASE13       | 2.01 | 0.044 |
| PTCRA        | 2.00  | 0.018 | CCDC62        | 2.01 | 0.020 |
| MARCKS       | 2.00  | 0.019 | LOC101929066  | 2.01 | 0.021 |
| HAPLN4       | 2.00  | 0.017 | FIBCD1        | 2.01 | 0.027 |



|              |      |       |              |      |       |
|--------------|------|-------|--------------|------|-------|
| ONECUT2      | 2.01 | 0.038 | HIP1R        | 2.01 | 0.041 |
| MFAP3L       | 2.01 | 0.018 | GBP5         | 2.01 | 0.029 |
| TMC1         | 2.01 | 0.012 | WNT11        | 2.01 | 0.019 |
| AURKC        | 2.01 | 0.034 | SLITRK6      | 2.01 | 0.017 |
| GEMIN8P4     | 2.01 | 0.027 | CEACAM1      | 2.01 | 0.032 |
| MIR6781      | 2.01 | 0.036 | LOC100506071 | 2.01 | 0.042 |
| ID3          | 2.01 | 0.025 | SNORD60      | 2.01 | 0.017 |
| HRAT5        | 2.01 | 0.032 | ZNF185       | 2.01 | 0.022 |
| IZUMO4       | 2.01 | 0.021 | SAT1         | 2.01 | 0.048 |
| TRIL         | 2.01 | 0.042 | RPGRIP1      | 2.01 | 0.045 |
| NLRP12       | 2.01 | 0.033 | C1orf115     | 2.01 | 0.041 |
| DBH          | 2.01 | 0.014 | TAC4         | 2.01 | 0.033 |
| CCDC30       | 2.01 | 0.014 | LINC00933    | 2.01 | 0.024 |
| TCP11L2      | 2.01 | 0.044 | LGALS9B      | 2.01 | 0.017 |
| CDX1         | 2.01 | 0.041 | HGD          | 2.01 | 0.034 |
| NID2         | 2.01 | 0.038 | LITAF        | 2.01 | 0.043 |
| TMEM59L      | 2.01 | 0.018 | BRCAT54      | 2.01 | 0.041 |
| LOC100506207 | 2.01 | 0.002 | LHPP         | 2.01 | 0.011 |
| RAB3C        | 2.01 | 0.030 | FOXF2        | 2.01 | 0.021 |
| NQO1         | 2.01 | 0.049 | LOC143666    | 2.01 | 0.045 |
| OXTR         | 2.01 | 0.019 | SLAMF9       | 2.01 | 0.044 |
| MIR5196      | 2.01 | 0.010 | SLC12A8      | 2.01 | 0.022 |
| MIR616       | 2.01 | 0.010 | GRM8         | 2.01 | 0.044 |
| PDE2A        | 2.01 | 0.034 | HIP1         | 2.01 | 0.020 |
| TNFSF9       | 2.01 | 0.021 | VSIG10L      | 2.01 | 0.042 |
| LOC105377348 | 2.01 | 0.036 | SLC25A27     | 2.01 | 0.044 |
| FENDRR       | 2.01 | 0.041 | CST7         | 2.02 | 0.021 |
| TCF24        | 2.01 | 0.020 | CHRN2        | 2.02 | 0.030 |
| VAMP5        | 2.01 | 0.035 | SNORD37      | 2.02 | 0.048 |
| CABLES1      | 2.01 | 0.042 | KLHL25       | 2.02 | 0.020 |
| MGST1        | 2.01 | 0.046 | BCAT1        | 2.02 | 0.013 |
| ELOVL4       | 2.01 | 0.040 | LOC101928796 | 2.02 | 0.015 |
| MEFV         | 2.01 | 0.044 | LMTK3        | 2.02 | 0.043 |
| SULT1A3      | 2.01 | 0.015 | LOC101928307 | 2.02 | 0.028 |
| PTPRU        | 2.01 | 0.022 | LRCH2        | 2.02 | 0.035 |
| ZNF280A      | 2.01 | 0.016 | BAAT         | 2.02 | 0.045 |
| OLAH         | 2.01 | 0.033 | SHC2         | 2.02 | 0.039 |
| C8orf46      | 2.01 | 0.011 | FOXA1        | 2.02 | 0.034 |
| LOC100130357 | 2.01 | 0.045 | HSPA2        | 2.02 | 0.020 |
| LINGO3       | 2.01 | 0.005 | IL9R         | 2.02 | 0.032 |
| LINC00893    | 2.01 | 0.021 | SNORD97      | 2.02 | 0.037 |
| ANKFN1       | 2.01 | 0.044 | GPR155       | 2.02 | 0.047 |
| SMG1P5       | 2.01 | 0.014 | FBXL19-AS1   | 2.02 | 0.012 |
| LMO7-AS1     | 2.01 | 0.013 | NCR3LG1      | 2.02 | 0.033 |
| LOC104968399 | 2.01 | 0.012 | PCDH18       | 2.02 | 0.024 |
| BEX1         | 2.01 | 0.029 | KCNE1        | 2.02 | 0.016 |
| LOC729083    | 2.01 | 0.042 | PARK2        | 2.02 | 0.044 |
| ZFX4         | 2.01 | 0.014 | RSAD2        | 2.02 | 0.046 |
| KLHL21       | 2.01 | 0.041 | LOC100129697 | 2.02 | 0.032 |
| LOC100507472 | 2.01 | 0.022 | GPNMB        | 2.02 | 0.017 |
| RRAD         | 2.01 | 0.011 | SUSD5        | 2.02 | 0.016 |
| PTPRR        | 2.01 | 0.036 | ADGRB3       | 2.02 | 0.031 |
| C14orf132    | 2.01 | 0.050 | CASP1        | 2.02 | 0.017 |
| LOC100129434 | 2.01 | 0.039 | CASK         | 2.02 | 0.017 |
| SMIM24       | 2.01 | 0.021 | LINC01366    | 2.02 | 0.024 |
| TCTEX1D4     | 2.01 | 0.016 | SLC44A3      | 2.02 | 0.035 |
| LOC102723385 | 2.01 | 0.028 | LSMEM1       | 2.02 | 0.028 |
| COL24A1      | 2.01 | 0.037 | CORIN        | 2.02 | 0.043 |
| HCFC1R1      | 2.01 | 0.039 | AZIN2        | 2.02 | 0.038 |
| SRRM3        | 2.01 | 0.045 | HPD          | 2.02 | 0.024 |
| CREM         | 2.01 | 0.042 | BNIP3        | 2.02 | 0.039 |
| NTRK1        | 2.01 | 0.038 | LOC102724297 | 2.02 | 0.024 |
| NRCAM        | 2.01 | 0.010 | MUC6         | 2.02 | 0.030 |
| KIAA1161     | 2.01 | 0.047 | NKAIN1       | 2.02 | 0.002 |
| NKX2-2       | 2.01 | 0.035 | OLFM3        | 2.02 | 0.017 |
| TXK          | 2.01 | 0.014 | NRXN1        | 2.02 | 0.005 |
| LOC100499484 | 2.01 | 0.049 | C11orf87     | 2.02 | 0.024 |
| SH2D2A       | 2.01 | 0.038 | RPS6KA2      | 2.02 | 0.048 |
| DNAH10       | 2.01 | 0.011 | DNER         | 2.02 | 0.049 |
| CNGA4        | 2.01 | 0.015 | PCDH19       | 2.02 | 0.022 |
| GPAT3        | 2.01 | 0.022 | KCNH8        | 2.02 | 0.036 |
| C4orf36      | 2.01 | 0.014 | AVP11        | 2.02 | 0.049 |

|                       |      |       |              |      |       |
|-----------------------|------|-------|--------------|------|-------|
| LOC729603             | 2.02 | 0.033 | SCN8A        | 2.04 | 0.048 |
| CACNG8                | 2.02 | 0.016 | HTR2C        | 2.04 | 0.039 |
| SLC35F3               | 2.02 | 0.038 | ACSL6        | 2.04 | 0.024 |
| CDH6                  | 2.02 | 0.034 | PAX8-AS1     | 2.04 | 0.039 |
| LINC01257             | 2.02 | 0.033 | SUGT1P1      | 2.04 | 0.040 |
| CD24                  | 2.02 | 0.020 | NPTX2        | 2.04 | 0.034 |
| AGAP11                | 2.02 | 0.022 | FAM196B      | 2.04 | 0.038 |
| SNORD14C              | 2.02 | 0.033 | GPR160       | 2.04 | 0.032 |
| ANXA1                 | 2.02 | 0.028 | DLX2         | 2.04 | 0.017 |
| TACSTD2               | 2.02 | 0.034 | LOC100288798 | 2.04 | 0.026 |
| MIR4257               | 2.02 | 0.036 | CAHM         | 2.04 | 0.044 |
| PELI2                 | 2.02 | 0.027 | MYO5C        | 2.04 | 0.019 |
| GREB1                 | 2.02 | 0.012 | EGFLAM-AS2   | 2.04 | 0.014 |
| SNORD63               | 2.02 | 0.013 | HECW1        | 2.04 | 0.047 |
| CAMK1D                | 2.02 | 0.024 | HIF1A-AS2    | 2.04 | 0.029 |
| SUMO1P1               | 2.02 | 0.043 | LINC00989    | 2.04 | 0.045 |
| RNASEH2B-AS1          | 2.02 | 0.037 | HSPE1-MOB4   | 2.04 | 0.012 |
| GP6                   | 2.02 | 0.021 | ZDBF2        | 2.04 | 0.024 |
| NBEA                  | 2.02 | 0.048 | CLDN1        | 2.04 | 0.016 |
| SLC45A4               | 2.02 | 0.049 | KYNU         | 2.04 | 0.011 |
| TMEM164               | 2.02 | 0.038 | SLC22A23     | 2.04 | 0.042 |
| MIR6755               | 2.02 | 0.003 | CSMD1        | 2.04 | 0.019 |
| RUNX1T1               | 2.02 | 0.043 | NKG7         | 2.04 | 0.036 |
| SGSM1                 | 2.03 | 0.049 | CXCR2P1      | 2.04 | 0.043 |
| EYA1                  | 2.03 | 0.043 | MST1R        | 2.04 | 0.041 |
| MYO7A                 | 2.03 | 0.012 | TXNL4A       | 2.04 | 0.028 |
| PROK2                 | 2.03 | 0.013 | LINC00324    | 2.04 | 0.035 |
| PSD                   | 2.03 | 0.022 | CAP2         | 2.04 | 0.046 |
| GRIP1                 | 2.03 | 0.034 | PRRX2        | 2.04 | 0.049 |
| ELFN1                 | 2.03 | 0.014 | DNAH17-AS1   | 2.04 | 0.030 |
| RGS8                  | 2.03 | 0.049 | OVOL1        | 2.04 | 0.026 |
| SRXN1                 | 2.03 | 0.017 | EPHB1        | 2.04 | 0.042 |
| MIR612                | 2.03 | 0.026 | LINC00115    | 2.04 | 0.037 |
| ARVCF                 | 2.03 | 0.036 | MIF-AS1      | 2.05 | 0.038 |
| LOC100499484-C9ORF174 | 2.03 | 0.023 | RPL13AP6     | 2.05 | 0.023 |
| PCDH10                | 2.03 | 0.028 | TXNDC2       | 2.05 | 0.044 |
| MID1                  | 2.03 | 0.020 | NOTUM        | 2.05 | 0.034 |
| LRP2BP                | 2.03 | 0.043 | MIR5587      | 2.05 | 0.030 |
| PLAC8                 | 2.03 | 0.043 | C9orf106     | 2.05 | 0.041 |
| NOV                   | 2.03 | 0.046 | FRAS1        | 2.05 | 0.007 |
| TSPAN11               | 2.03 | 0.035 | SCRG1        | 2.05 | 0.013 |
| ADAMTSL4-AS1          | 2.03 | 0.047 | NUPR1        | 2.05 | 0.049 |
| CSF2RA                | 2.03 | 0.047 | ALS2CR12     | 2.05 | 0.037 |
| RFESD                 | 2.03 | 0.042 | KANK4        | 2.05 | 0.042 |
| TMEM255B              | 2.03 | 0.034 | CHRNA2       | 2.05 | 0.019 |
| DEPTOR                | 2.03 | 0.014 | C11orf96     | 2.05 | 0.027 |
| LOC100129917          | 2.03 | 0.029 | SNORD25      | 2.05 | 0.022 |
| TOX                   | 2.03 | 0.010 | MIR4435-2    | 2.05 | 0.010 |
| PMFBP1                | 2.03 | 0.032 | BMP7         | 2.05 | 0.021 |
| TTC41P                | 2.03 | 0.020 | AKAP12       | 2.05 | 0.019 |
| CYB5R4                | 2.03 | 0.025 | ABHD4        | 2.05 | 0.037 |
| ZCCHC12               | 2.03 | 0.025 | IGSF6        | 2.05 | 0.035 |
| MCF2                  | 2.03 | 0.031 | DNAJC5B      | 2.05 | 0.042 |
| CTSE                  | 2.03 | 0.042 | ACOXL        | 2.05 | 0.020 |
| CAB39L                | 2.03 | 0.014 | MYADM        | 2.06 | 0.023 |
| DDIT3                 | 2.03 | 0.040 | LINC00908    | 2.06 | 0.023 |
| LINC00528             | 2.03 | 0.047 | SNORD26      | 2.06 | 0.018 |
| ACTRT3                | 2.03 | 0.021 | CNTN1        | 2.06 | 0.034 |
| GNA14                 | 2.03 | 0.030 | HAMP         | 2.07 | 0.031 |
| MIR4667               | 2.03 | 0.020 | SLC35F1      | 2.07 | 0.033 |
| COL5A2                | 2.03 | 0.042 | RNA5-8S5     | 2.07 | 0.038 |
| SELPLG                | 2.03 | 0.039 | TMEM47       | 2.07 | 0.035 |
| MAP1A                 | 2.03 | 0.045 | PCDHGB1      | 2.07 | 0.022 |
| MMP25                 | 2.03 | 0.015 | STX1B        | 2.07 | 0.047 |
| MIR4420               | 2.03 | 0.040 | KLHL38       | 2.08 | 0.029 |
| PHKA2-AS1             | 2.03 | 0.029 | WDR27        | 2.08 | 0.010 |
| VGLL2                 | 2.04 | 0.013 | FAT2         | 2.08 | 0.016 |
| PDZD2                 | 2.04 | 0.042 | TMEM178B     | 2.08 | 0.040 |
| DRP2                  | 2.04 | 0.038 | TSNARE1      | 2.08 | 0.013 |
| GAL3ST2               | 2.04 | 0.020 | CACNA1D      | 2.08 | 0.038 |
| GAPT                  | 2.04 | 0.015 | TOLLIP-AS1   | 2.08 | 0.028 |
| ZNF57                 | 2.04 | 0.035 | MPZ          | 2.09 | 0.046 |

|              |      |       |                  |      |       |
|--------------|------|-------|------------------|------|-------|
| TTC39A       | 2.09 | 0.033 | LOC101929231     | 2.26 | 0.043 |
| MIR181A2HG   | 2.09 | 0.037 | FLJ42969         | 2.26 | 0.030 |
| LINC01314    | 2.09 | 0.043 | FKSG29           | 2.26 | 0.031 |
| SLC30A1      | 2.09 | 0.049 | CDH3             | 2.27 | 0.039 |
| LINC01554    | 2.09 | 0.038 | MYO5B            | 2.27 | 0.018 |
| LOC729867    | 2.10 | 0.015 | TMEM145          | 2.28 | 0.020 |
| CLEC5A       | 2.10 | 0.036 | CD244            | 2.28 | 0.023 |
| ASPDH        | 2.10 | 0.025 | PPIEL            | 2.28 | 0.014 |
| MIRLET7D     | 2.10 | 0.043 | MIR24-2          | 2.29 | 0.050 |
| SECTM1       | 2.11 | 0.016 | LINC00189        | 2.29 | 0.049 |
| KCNG4        | 2.11 | 0.025 | LINC00884        | 2.29 | 0.047 |
| LOC100287036 | 2.11 | 0.034 | ZFPM2-AS1        | 2.29 | 0.043 |
| SNAPC1       | 2.11 | 0.031 | FAM71E1          | 2.29 | 0.015 |
| ANKRD20A9P   | 2.11 | 0.045 | DACT3-AS1        | 2.30 | 0.028 |
| BCRP3        | 2.11 | 0.016 | CMTM8            | 2.31 | 0.006 |
| RHD          | 2.12 | 0.010 | CACNA2D2         | 2.31 | 0.002 |
| TNXB         | 2.12 | 0.050 | SNAP91           | 2.31 | 0.034 |
| TREM1        | 2.12 | 0.021 | FAM19A2          | 2.31 | 0.046 |
| IFNG-AS1     | 2.12 | 0.035 | C1orf127         | 2.31 | 0.044 |
| HS6ST3       | 2.12 | 0.036 | LYVE1            | 2.32 | 0.039 |
| LOC101929415 | 2.13 | 0.026 | NUP210L          | 2.32 | 0.047 |
| MIR4742      | 2.13 | 0.042 | OR5B12           | 2.32 | 0.030 |
| TPSD1        | 2.13 | 0.014 | IL20             | 2.32 | 0.019 |
| KCNS3        | 2.13 | 0.040 | ZNF157           | 2.33 | 0.043 |
| TJP2         | 2.14 | 0.031 | MAP2K6           | 2.33 | 0.034 |
| LINC00174    | 2.14 | 0.023 | CDK15            | 2.34 | 0.017 |
| CLDN4        | 2.14 | 0.015 | CLDN14           | 2.34 | 0.034 |
| HIF1A-AS1    | 2.15 | 0.036 | IL18BP           | 2.34 | 0.031 |
| PDK1         | 2.15 | 0.001 | CLEC19A          | 2.35 | 0.050 |
| LINC01215    | 2.16 | 0.016 | CCDC85A          | 2.35 | 0.021 |
| LOC102723766 | 2.16 | 0.012 | FBXO2            | 2.35 | 0.038 |
| LOC100133985 | 2.16 | 0.037 | PIR              | 2.35 | 0.044 |
| NAA50        | 2.16 | 0.021 | IGF2BP3          | 2.35 | 0.036 |
| LINC01135    | 2.16 | 0.013 | FARP1            | 2.35 | 0.025 |
| SP140        | 2.17 | 0.022 | ADGRE1           | 2.36 | 0.024 |
| DFNB31       | 2.17 | 0.036 | SMIM17           | 2.36 | 0.015 |
| LIFR         | 2.17 | 0.028 | ABCA13           | 2.36 | 0.012 |
| PPARGC1A     | 2.17 | 0.028 | LOC101929771     | 2.36 | 0.019 |
| AASS         | 2.17 | 0.049 | DEDD2            | 2.37 | 0.018 |
| CYR61        | 2.17 | 0.023 | MIA2             | 2.37 | 0.043 |
| MCPH1-AS1    | 2.18 | 0.043 | SH3TC2           | 2.37 | 0.037 |
| IL12A-AS1    | 2.18 | 0.043 | LL22NC03-63E9 ,3 | 2.37 | 0.018 |
| MIR4656      | 2.18 | 0.042 | KLHL32           | 2.37 | 0.030 |
| STON1        | 2.18 | 0.043 | RSPO1            | 2.38 | 0.026 |
| LINC00278    | 2.18 | 0.036 | FAM163B          | 2.38 | 0.034 |
| DNAJC6       | 2.19 | 0.029 | GLUL             | 2.38 | 0.031 |
| LOC728739    | 2.19 | 0.015 | AK4              | 2.38 | 0.039 |
| MAB21L3      | 2.19 | 0.032 | MYOM1            | 2.39 | 0.044 |
| TMEM56       | 2.20 | 0.023 | LOC101927543     | 2.39 | 0.033 |
| IL3RA        | 2.20 | 0.026 | LINC00552        | 2.39 | 0.037 |
| LOC221946    | 2.20 | 0.048 | PKP2             | 2.39 | 0.014 |
| ZNF555       | 2.20 | 0.025 | STX18-AS1        | 2.40 | 0.035 |
| SFTPD        | 2.20 | 0.038 | AMN1             | 2.40 | 0.036 |
| CNGA1        | 2.20 | 0.012 | PLXDC1           | 2.40 | 0.050 |
| CACNG4       | 2.20 | 0.040 | SERPINB12        | 2.40 | 0.031 |
| DNAH7        | 2.20 | 0.025 | GET4             | 2.41 | 0.049 |
| MIR6866      | 2.21 | 0.010 | ANKRD26P3        | 2.41 | 0.011 |
| LINC00176    | 2.21 | 0.018 | ESPN             | 2.41 | 0.030 |
| LOC729950    | 2.21 | 0.042 | OVCH1-AS1        | 2.41 | 0.042 |
| BFSP1        | 2.21 | 0.025 | ZNF556           | 2.42 | 0.038 |
| TC2N         | 2.21 | 0.038 | MBL2             | 2.42 | 0.032 |
| LOC101929541 | 2.22 | 0.015 | ID1              | 2.43 | 0.043 |
| MIR6716      | 2.22 | 0.037 | ANKRD30B         | 2.43 | 0.048 |
| MACC1        | 2.22 | 0.037 | SNN              | 2.43 | 0.021 |
| RNU4ATAC     | 2.24 | 0.050 | LRRC16B          | 2.43 | 0.030 |
| CLEC12A      | 2.24 | 0.020 | PPAP2B           | 2.43 | 0.022 |
| CADM2        | 2.24 | 0.036 | LOC100130872     | 2.44 | 0.040 |
| SCN4B        | 2.24 | 0.028 | LOC101928710     | 2.44 | 0.017 |
| CRTAM        | 2.24 | 0.050 | MTMR7            | 2.44 | 0.011 |
| LINC00242    | 2.25 | 0.028 | SCARA5           | 2.45 | 0.034 |
| LINC01220    | 2.25 | 0.039 | ABCB6            | 2.45 | 0.033 |
| CDNF         | 2.26 | 0.045 | ASTN1            | 2.45 | 0.017 |

|                 |      |       |              |      |       |
|-----------------|------|-------|--------------|------|-------|
| EGR4            | 2.45 | 0.023 | RNF219-AS1   | 2.72 | 0.043 |
| LYPLAL1-AS1     | 2.45 | 0.029 | PHKG1        | 2.73 | 0.021 |
| C2orf71         | 2.46 | 0.025 | PPP1R27      | 2.73 | 0.029 |
| LOC101928855    | 2.46 | 0.045 | ZNF213-AS1   | 2.74 | 0.017 |
| CHRM4           | 2.46 | 0.030 | ATP6V0D2     | 2.74 | 0.041 |
| DGCR10          | 2.46 | 0.048 | LOC101926975 | 2.74 | 0.040 |
| TXNRD1          | 2.47 | 0.022 | ARPP21       | 2.75 | 0.025 |
| MIR22           | 2.48 | 0.000 | DNAJA4       | 2.75 | 0.044 |
| XKR7            | 2.50 | 0.038 | SEMA6B       | 2.75 | 0.040 |
| PLEKHN1         | 2.50 | 0.018 | LOC728989    | 2.75 | 0.017 |
| GNG4            | 2.50 | 0.020 | TLR10        | 2.76 | 0.023 |
| LINC01088       | 2.50 | 0.013 | MIR6862-1    | 2.76 | 0.003 |
| TMEM132B        | 2.50 | 0.031 | SLC26A9      | 2.77 | 0.041 |
| ZNF365          | 2.50 | 0.050 | PGF          | 2.77 | 0.031 |
| SNORA14B        | 2.50 | 0.014 | RPS6KA2-IT1  | 2.78 | 0.027 |
| RNVU1-1         | 2.50 | 0.035 | RNASE7       | 2.78 | 0.028 |
| GOLGA6L7P       | 2.51 | 0.033 | FAM189A2     | 2.78 | 0.011 |
| DEFB1           | 2.52 | 0.049 | XKR9         | 2.78 | 0.044 |
| ERMN            | 2.53 | 0.046 | LOC100507487 | 2.79 | 0.047 |
| PEBP4           | 2.53 | 0.042 | PCDHGA5      | 2.79 | 0.017 |
| SLC48A1         | 2.53 | 0.026 | MS4A14       | 2.80 | 0.039 |
| LOC653786       | 2.54 | 0.021 | LOC101928841 | 2.80 | 0.011 |
| SRD5A2          | 2.54 | 0.010 | WEE2-AS1     | 2.80 | 0.033 |
| MSX1            | 2.55 | 0.041 | RPSAP52      | 2.80 | 0.032 |
| LINC00494       | 2.55 | 0.039 | PHF24        | 2.81 | 0.016 |
| IL13RA2         | 2.56 | 0.030 | MIR7112      | 2.81 | 0.010 |
| LEKR1           | 2.56 | 0.049 | LRRC63       | 2.82 | 0.037 |
| SYN2            | 2.56 | 0.011 | TRIML2       | 2.82 | 0.032 |
| MIR6775         | 2.56 | 0.035 | ADM          | 2.82 | 0.048 |
| CDH22           | 2.56 | 0.013 | LOC100130417 | 2.82 | 0.034 |
| SNAI2           | 2.56 | 0.022 | DLC1         | 2.83 | 0.015 |
| ZNF669          | 2.57 | 0.024 | RASAL1       | 2.83 | 0.014 |
| FBXL16          | 2.57 | 0.035 | LILRA4       | 2.83 | 0.022 |
| RNF103-CHMP3    | 2.57 | 0.030 | CACNA1G      | 2.83 | 0.004 |
| SDS             | 2.57 | 0.025 | MUC12        | 2.84 | 0.010 |
| FAM83B          | 2.58 | 0.016 | MIR4746      | 2.84 | 0.030 |
| LINC01132       | 2.59 | 0.025 | DENND2A      | 2.84 | 0.038 |
| MIXL1           | 2.60 | 0.032 | DHRS2        | 2.85 | 0.036 |
| IRF4            | 2.60 | 0.047 | C7           | 2.85 | 0.035 |
| ABHD11-AS1      | 2.60 | 0.047 | LOC101927844 | 2.85 | 0.027 |
| NPFFR2          | 2.61 | 0.032 | NR4A2        | 2.85 | 0.043 |
| VIPR2           | 2.61 | 0.019 | PGM5         | 2.85 | 0.046 |
| POPDC2          | 2.62 | 0.014 | BCO2         | 2.86 | 0.018 |
| CREB5           | 2.62 | 0.027 | TMEM198      | 2.86 | 0.025 |
| MUC13           | 2.62 | 0.023 | ASAP3        | 2.87 | 0.038 |
| MIR29C          | 2.62 | 0.033 | IL7R         | 2.87 | 0.022 |
| MIR6751         | 2.62 | 0.031 | EPGN         | 2.87 | 0.026 |
| MIR6763         | 2.62 | 0.002 | LOC101928107 | 2.87 | 0.041 |
| DNAJB1          | 2.63 | 0.049 | LINC00971    | 2.88 | 0.044 |
| PPP1R15A        | 2.64 | 0.017 | SOST         | 2.89 | 0.033 |
| FRMPD2          | 2.64 | 0.047 | OLFM2        | 2.90 | 0.011 |
| MIR23A          | 2.65 | 0.031 | MIR5004      | 2.90 | 0.038 |
| EPHA5           | 2.65 | 0.019 | LOC101928847 | 2.91 | 0.050 |
| CLU             | 2.65 | 0.036 | TRIM67       | 2.91 | 0.029 |
| POR             | 2.66 | 0.025 | HUNK         | 2.92 | 0.035 |
| OTOA            | 2.66 | 0.038 | SLAMF7       | 2.92 | 0.019 |
| RNASEK-C17orf49 | 2.66 | 0.027 | AACSP1       | 2.93 | 0.028 |
| HEPH            | 2.66 | 0.023 | ALPK2        | 2.93 | 0.029 |
| LINC00462       | 2.66 | 0.043 | ARL14EPL     | 2.95 | 0.047 |
| MPPED2          | 2.66 | 0.041 | CD83         | 2.96 | 0.013 |
| NTNG2           | 2.66 | 0.016 | SV2C         | 2.97 | 0.037 |
| ANKRD30BP3      | 2.67 | 0.015 | TMEM51-AS1   | 2.98 | 0.024 |
| DARS-AS1        | 2.67 | 0.021 | CNGB3        | 2.98 | 0.010 |
| TMPRSS9         | 2.67 | 0.029 | ASGR2        | 2.98 | 0.048 |
| SNORA57         | 2.68 | 0.039 | C9orf173-AS1 | 2.99 | 0.048 |
| DIP2C           | 2.68 | 0.019 | CSRP2        | 2.99 | 0.038 |
| F10             | 2.68 | 0.033 | MUC20        | 2.99 | 0.013 |
| ROR2            | 2.69 | 0.048 | LOC727751    | 2.99 | 0.050 |
| TMEM37          | 2.70 | 0.022 | OR1F2P       | 2.99 | 0.016 |
| CCL26           | 2.71 | 0.023 | UBE2Q2P1     | 3.00 | 0.049 |
| RNA45S5         | 2.71 | 0.032 | FHAD1        | 3.00 | 0.041 |
| ALOX12          | 2.71 | 0.027 | BCAS1        | 3.01 | 0.030 |

|                |      |       |              |      |       |
|----------------|------|-------|--------------|------|-------|
| DNAJB4         | 3.01 | 0.042 | HEY1         | 3.52 | 0.024 |
| CTSG           | 3.02 | 0.005 | HTR2B        | 3.53 | 0.019 |
| ARPP19         | 3.02 | 0.041 | SNORA2A      | 3.53 | 0.041 |
| PROM2          | 3.05 | 0.017 | EGF          | 3.54 | 0.027 |
| RHBDL2         | 3.06 | 0.039 | RPL34-AS1    | 3.54 | 0.040 |
| MOB3B          | 3.07 | 0.048 | LINC01269    | 3.54 | 0.035 |
| PLEKHA6        | 3.08 | 0.047 | RFPL2        | 3.54 | 0.025 |
| TVP23C-CDRT4   | 3.09 | 0.049 | KLRC4-KLRK1  | 3.55 | 0.042 |
| TTYH2          | 3.10 | 0.033 | ZSCAN12P1    | 3.56 | 0.012 |
| ATP2A1         | 3.10 | 0.022 | C2CD4C       | 3.56 | 0.042 |
| DNAH17         | 3.10 | 0.026 | PKD2L1       | 3.56 | 0.025 |
| PKD1L1         | 3.10 | 0.039 | RYR2         | 3.58 | 0.020 |
| GRM1           | 3.10 | 0.024 | TNIP3        | 3.59 | 0.021 |
| TEX14          | 3.10 | 0.024 | CDH15        | 3.59 | 0.022 |
| GPR150         | 3.12 | 0.038 | MAFA         | 3.60 | 0.021 |
| CCL3L1         | 3.13 | 0.010 | PKNOX2       | 3.60 | 0.044 |
| TPPP3          | 3.13 | 0.034 | ANKRD1       | 3.62 | 0.047 |
| STAT4          | 3.13 | 0.025 | CDH13        | 3.64 | 0.044 |
| MFAP5          | 3.14 | 0.014 | GBA3         | 3.66 | 0.026 |
| CUBN           | 3.14 | 0.027 | MAPK4        | 3.66 | 0.045 |
| MIR6862-2      | 3.15 | 0.016 | MIR4749      | 3.66 | 0.011 |
| NDNF           | 3.16 | 0.049 | EID3         | 3.67 | 0.019 |
| PLEKHA7        | 3.19 | 0.013 | EDNRB        | 3.67 | 0.035 |
| PANX2          | 3.19 | 0.036 | AMICA1       | 3.67 | 0.011 |
| SLC16A10       | 3.20 | 0.029 | SEMA3E       | 3.67 | 0.020 |
| LOC100288911   | 3.20 | 0.022 | CGNL1        | 3.68 | 0.025 |
| ITIH5          | 3.20 | 0.020 | LOC101927588 | 3.68 | 0.033 |
| DRD5P2         | 3.20 | 0.011 | IGF2BP1      | 3.68 | 0.020 |
| ZFAND2A        | 3.21 | 0.033 | RNFT2        | 3.68 | 0.042 |
| LINC01537      | 3.22 | 0.019 | RNU6-42P     | 3.69 | 0.017 |
| AKR1C3         | 3.23 | 0.044 | PCYT1B       | 3.70 | 0.031 |
| NPHP3          | 3.24 | 0.012 | ROR1-AS1     | 3.70 | 0.039 |
| LOC440461      | 3.24 | 0.050 | LINC00704    | 3.71 | 0.021 |
| C9orf50        | 3.25 | 0.023 | MIR941-1     | 3.71 | 0.013 |
| AKR1C1         | 3.26 | 0.016 | RBM24        | 3.73 | 0.025 |
| SMAD9          | 3.26 | 0.047 | PXDNL        | 3.74 | 0.049 |
| SEZ6           | 3.27 | 0.032 | CRIP2        | 3.76 | 0.049 |
| PCAT1          | 3.27 | 0.039 | VEPH1        | 3.78 | 0.020 |
| ZNF554         | 3.27 | 0.010 | PCDHA11      | 3.79 | 0.029 |
| ENKUR          | 3.29 | 0.018 | RSPO3        | 3.82 | 0.012 |
| ARMCX5-GPRASP2 | 3.29 | 0.026 | COL26A1      | 3.86 | 0.042 |
| GPRC5B         | 3.29 | 0.017 | AQP8         | 3.87 | 0.036 |
| TPPP           | 3.29 | 0.030 | SYT6         | 3.88 | 0.035 |
| LPAR3          | 3.29 | 0.036 | LINC00942    | 3.91 | 0.048 |
| LOC102477328   | 3.32 | 0.025 | UNKL         | 3.91 | 0.030 |
| TRIM16         | 3.32 | 0.029 | LINC01602    | 3.92 | 0.046 |
| LOC389602      | 3.32 | 0.041 | MIR19A       | 3.93 | 0.019 |
| SNAI1          | 3.32 | 0.041 | NOMO3        | 3.94 | 0.025 |
| CAMKV          | 3.32 | 0.012 | SYNC         | 3.95 | 0.026 |
| MIR6789        | 3.33 | 0.038 | MIR4673      | 3.99 | 0.032 |
| FLJ31356       | 3.33 | 0.038 | C1orf229     | 4.00 | 0.031 |
| LGALS8-AS1     | 3.34 | 0.025 | CETP         | 4.00 | 0.043 |
| GALR3          | 3.35 | 0.027 | MYOM2        | 4.01 | 0.046 |
| C4orf19        | 3.37 | 0.027 | CDKN1C       | 4.01 | 0.039 |
| FLNC           | 3.37 | 0.011 | SP7          | 4.01 | 0.030 |
| FAT3           | 3.38 | 0.041 | NECAB2       | 4.03 | 0.019 |
| MIR6890        | 3.39 | 0.046 | LOC103021296 | 4.03 | 0.024 |
| TRPC2          | 3.39 | 0.038 | KCNN3        | 4.04 | 0.050 |
| MIR2682        | 3.39 | 0.017 | FBLL1        | 4.08 | 0.020 |
| LINC01085      | 3.42 | 0.026 | LOC102724238 | 4.09 | 0.026 |
| EBPL           | 3.44 | 0.032 | SCN3B        | 4.09 | 0.025 |
| SNORA2B        | 3.44 | 0.033 | COL17A1      | 4.11 | 0.030 |
| LINC00603      | 3.47 | 0.038 | BBC3         | 4.12 | 0.043 |
| GCLM           | 3.47 | 0.013 | LOC100506321 | 4.13 | 0.016 |
| GFRA2          | 3.47 | 0.044 | CALCRL       | 4.13 | 0.049 |
| SAMD11         | 3.48 | 0.026 | COMMD3-BMI1  | 4.16 | 0.039 |
| AK8            | 3.51 | 0.025 | SERHL        | 4.17 | 0.043 |
| TLR5           | 3.51 | 0.035 | OSGIN1       | 4.18 | 0.021 |
| HSPA1L         | 3.51 | 0.037 | TACR1        | 4.19 | 0.041 |
| MBNL2          | 3.52 | 0.037 | MIR6825      | 4.21 | 0.024 |
| LOC100132735   | 3.52 | 0.030 | GPR142       | 4.24 | 0.047 |
| GPRC5A         | 3.52 | 0.018 | AKR1C2       | 4.24 | 0.005 |

|              |      |       |                |       |       |
|--------------|------|-------|----------------|-------|-------|
| HSPB9        | 4.26 | 0.020 | SNORA7A        | 7.50  | 0.027 |
| WFDC21P      | 4.29 | 0.046 | AARSD1         | 7.56  | 0.012 |
| RND1         | 4.32 | 0.047 | C8orf44-SGK3   | 7.98  | 0.015 |
| LINC00861    | 4.33 | 0.033 | MT1G           | 8.45  | 0.046 |
| LOC101929470 | 4.33 | 0.030 | MT1M           | 8.83  | 0.026 |
| GULP1        | 4.34 | 0.043 | HSPA6          | 9.75  | 0.014 |
| MS4A6A       | 4.36 | 0.014 | HSPA7          | 9.82  | 0.050 |
| HCN1         | 4.37 | 0.039 | ABCA17P        | - inf | 0.026 |
| LINC-PINT    | 4.38 | 0.037 | ABCC11         | - inf | 0.040 |
| CD48         | 4.40 | 0.040 | ACOX2          | - inf | 0.019 |
| ZNF165       | 4.44 | 0.012 | ACSBG1         | - inf | 0.028 |
| PRRG2        | 4.46 | 0.042 | ACTG1P17       | - inf | 0.041 |
| CELF6        | 4.46 | 0.007 | ADAM21P1       | - inf | 0.026 |
| C19orf48     | 4.57 | 0.018 | ADGRE3         | - inf | 0.025 |
| BRE-AS1      | 4.57 | 0.043 | ADGRF4         | - inf | 0.035 |
| LINC01229    | 4.59 | 0.026 | ADGRF5         | - inf | 0.025 |
| MIR6884      | 4.60 | 0.041 | ADGRG3         | - inf | 0.042 |
| MIR6820      | 4.61 | 0.026 | ADH1A          | - inf | 0.021 |
| DGKI         | 4.63 | 0.036 | ALOX15P1       | - inf | 0.030 |
| RASD1        | 4.63 | 0.031 | AMH            | - inf | 0.022 |
| HMOX1        | 4.65 | 0.028 | ANKRD22        | - inf | 0.037 |
| TRAPPC5      | 4.71 | 0.030 | ANKRD34B       | - inf | 0.017 |
| KBTBD12      | 4.73 | 0.021 | ANO9           | - inf | 0.022 |
| TRIM16L      | 4.77 | 0.029 | AP1M2          | - inf | 0.013 |
| ZSWIM5       | 4.78 | 0.013 | APOA1-AS       | - inf | 0.044 |
| TEX19        | 4.83 | 0.012 | APOBEC3B-AS1   | - inf | 0.034 |
| AEBP1        | 4.84 | 0.032 | ARG1           | - inf | 0.034 |
| NBPF25P      | 4.87 | 0.045 | ARID3C         | - inf | 0.040 |
| FOSB         | 4.88 | 0.035 | ASAP1-IT1      | - inf | 0.011 |
| PROC         | 4.90 | 0.027 | ASTL           | - inf | 0.016 |
| GPR75-ASB3   | 4.93 | 0.032 | ATP11A-AS1     | - inf | 0.015 |
| MIR6858      | 4.96 | 0.038 | ATP8B5P        | - inf | 0.049 |
| MOXD1        | 4.99 | 0.012 | B3GAT2         | - inf | 0.035 |
| TJP3         | 5.01 | 0.024 | BARHL2         | - inf | 0.020 |
| SYT5         | 5.06 | 0.022 | BCHE           | - inf | 0.031 |
| LRRC3B       | 5.06 | 0.041 | BEAN1-AS1      | - inf | 0.016 |
| LPAR6        | 5.08 | 0.030 | BHMG1          | - inf | 0.024 |
| SYT4         | 5.13 | 0.035 | BIRC6-AS2      | - inf | 0.033 |
| HCRT2        | 5.15 | 0.026 | BLOC1S5-TXNDC5 | - inf | 0.032 |
| GADD45B      | 5.18 | 0.027 | BMS1P21        | - inf | 0.038 |
| MTTP         | 5.18 | 0.026 | BTNL9          | - inf | 0.044 |
| MT1JP        | 5.19 | 0.011 | C12orf77       | - inf | 0.028 |
| MIR6816      | 5.21 | 0.039 | C15orf26       | - inf | 0.036 |
| TNFRSF8      | 5.21 | 0.049 | C16orf74       | - inf | 0.045 |
| COL14A1      | 5.23 | 0.044 | C18orf61       | - inf | 0.020 |
| TREML4       | 5.24 | 0.032 | C1orf234       | - inf | 0.019 |
| DNAH11       | 5.32 | 0.015 | C1orf61        | - inf | 0.045 |
| MIR6800      | 5.35 | 0.020 | C1QL3          | - inf | 0.048 |
| MT1F         | 5.45 | 0.041 | C20orf203      | - inf | 0.043 |
| ARC          | 5.45 | 0.032 | C21orf62       | - inf | 0.025 |
| SNAP25       | 5.46 | 0.029 | C2CD4B         | - inf | 0.047 |
| KIF1A        | 5.47 | 0.019 | C3orf35        | - inf | 0.014 |
| HSPA1B       | 5.52 | 0.031 | C6orf132       | - inf | 0.011 |
| LRRC4C       | 5.53 | 0.026 | CA3            | - inf | 0.015 |
| NR4A1        | 5.58 | 0.022 | CABP1          | - inf | 0.050 |
| CRLF2        | 5.60 | 0.046 | CACNB2         | - inf | 0.035 |
| LMF1-AS1     | 5.64 | 0.023 | CALCB          | - inf | 0.041 |
| TREML3P      | 5.64 | 0.024 | CALML3         | - inf | 0.025 |
| HSPA1A       | 5.72 | 0.044 | CCDC42B        | - inf | 0.028 |
| NEU4         | 5.77 | 0.039 | CCDC8          | - inf | 0.022 |
| LCAL1        | 5.81 | 0.019 | CCDC83         | - inf | 0.046 |
| MT2A         | 5.81 | 0.041 | CCR10          | - inf | 0.046 |
| PLEKHG4B     | 5.99 | 0.013 | CD81-AS1       | - inf | 0.017 |
| MT1E         | 6.06 | 0.034 | CDCP2          | - inf | 0.025 |
| VGf          | 6.15 | 0.043 | CDR1           | - inf | 0.026 |
| GADD45G      | 6.25 | 0.036 | CFAP57         | - inf | 0.014 |
| MT1X         | 6.32 | 0.029 | CHAT           | - inf | 0.018 |
| ARL2-SNX15   | 6.66 | 0.040 | CHI3L2         | - inf | 0.028 |
| ANO3         | 6.91 | 0.027 | CHKB-CPT1B     | - inf | 0.024 |
| LOC344887    | 6.96 | 0.050 | CKMT1B         | - inf | 0.039 |
| F8A3         | 6.99 | 0.044 | CLCN1          | - inf | 0.050 |
| MIR17        | 7.36 | 0.045 | CLDN20         | - inf | 0.025 |

|              |       |       |                |       |       |
|--------------|-------|-------|----------------|-------|-------|
| CLEC2L       | - inf | 0.015 | GPR157         | - inf | 0.028 |
| CNKSR1       | - inf | 0.039 | GPR182         | - inf | 0.023 |
| COL6A4P2     | - inf | 0.012 | GPR25          | - inf | 0.035 |
| COL6A6       | - inf | 0.038 | GPR62          | - inf | 0.035 |
| COX8C        | - inf | 0.030 | GUCA2B         | - inf | 0.045 |
| CPLX3        | - inf | 0.038 | GUSBP3         | - inf | 0.044 |
| CRHR1-IT1    | - inf | 0.047 | H2AFB1         | - inf | 0.045 |
| CRIP3        | - inf | 0.019 | H2AFB2         | - inf | 0.038 |
| CXCL9        | - inf | 0.038 | HAR1A          | - inf | 0.014 |
| CYP2D6       | - inf | 0.020 | HCG2040054     | - inf | 0.049 |
| CYP3A5       | - inf | 0.043 | HERC2P3        | - inf | 0.013 |
| CYP4F35P     | - inf | 0.036 | HHIP12         | - inf | 0.021 |
| DDI1         | - inf | 0.037 | HIPK4          | - inf | 0.031 |
| DDX11L10     | - inf | 0.018 | HIST1H2BM      | - inf | 0.033 |
| DES          | - inf | 0.018 | HIST1H3I       | - inf | 0.026 |
| DGKK         | - inf | 0.031 | HIST1H4B       | - inf | 0.025 |
| DHRS4L1      | - inf | 0.015 | HLF            | - inf | 0.027 |
| DLG3-AS1     | - inf | 0.029 | HNRNP3         | - inf | 0.045 |
| DNAJC12      | - inf | 0.032 | HNRNPUL2-BSCL2 | - inf | 0.031 |
| DPY19L2P3    | - inf | 0.025 | HOXA-AS3       | - inf | 0.040 |
| EBF2         | - inf | 0.023 | HOXC6          | - inf | 0.018 |
| ECSCR        | - inf | 0.021 | HSPB6          | - inf | 0.050 |
| EFNA1        | - inf | 0.042 | HTRA4          | - inf | 0.042 |
| ELOVL3       | - inf | 0.018 | HUS1B          | - inf | 0.024 |
| EMX1         | - inf | 0.048 | IL18RAP        | - inf | 0.027 |
| ENTPD8       | - inf | 0.049 | IL36G          | - inf | 0.044 |
| EPB41L4A-AS2 | - inf | 0.002 | IQSEC3         | - inf | 0.025 |
| EPN3         | - inf | 0.028 | IRAIN          | - inf | 0.025 |
| ERBB3        | - inf | 0.011 | ITIH3          | - inf | 0.029 |
| ERICH4       | - inf | 0.047 | ITIH4-AS1      | - inf | 0.025 |
| ETV2         | - inf | 0.014 | ITPRIPL1       | - inf | 0.029 |
| EXTL1        | - inf | 0.034 | KBTBD13        | - inf | 0.022 |
| F2RL2        | - inf | 0.021 | KCNC1          | - inf | 0.011 |
| F5           | - inf | 0.027 | KCNIP4-IT1     | - inf | 0.048 |
| F8A1         | - inf | 0.044 | KCNS2          | - inf | 0.029 |
| F8A2         | - inf | 0.002 | KCNV1          | - inf | 0.049 |
| FALEC        | - inf | 0.029 | KIAA1549L      | - inf | 0.022 |
| FAM133A      | - inf | 0.029 | KLHL41         | - inf | 0.022 |
| FAM151A      | - inf | 0.036 | KLK13          | - inf | 0.025 |
| FAM19A3      | - inf | 0.013 | KLRK1          | - inf | 0.028 |
| FAM228A      | - inf | 0.035 | KRT7           | - inf | 0.039 |
| FAM231C      | - inf | 0.049 | KRTAP5-8       | - inf | 0.022 |
| FAM57B       | - inf | 0.044 | KRTCAP3        | - inf | 0.017 |
| FBXL13       | - inf | 0.032 | LAIR2          | - inf | 0.048 |
| FBXO39       | - inf | 0.029 | LGALS9C        | - inf | 0.007 |
| FCGR1C       | - inf | 0.047 | LGI4           | - inf | 0.002 |
| FGF20        | - inf | 0.030 | LHFPL3-AS2     | - inf | 0.024 |
| FITM1        | - inf | 0.017 | LIN28B         | - inf | 0.045 |
| FKBP1AP1     | - inf | 0.048 | LINC00158      | - inf | 0.025 |
| FOXCUT       | - inf | 0.035 | LINC00222      | - inf | 0.012 |
| FOXI1        | - inf | 0.015 | LINC00377      | - inf | 0.027 |
| FRMPD3       | - inf | 0.036 | LINC00398      | - inf | 0.044 |
| FSCB         | - inf | 0.047 | LINC00570      | - inf | 0.035 |
| FXYP6-FXYD2  | - inf | 0.024 | LINC00597      | - inf | 0.018 |
| GABRB1       | - inf | 0.036 | LINC00954      | - inf | 0.032 |
| GAL3ST3      | - inf | 0.017 | LINC01063      | - inf | 0.011 |
| GALNT14      | - inf | 0.010 | LINC01133      | - inf | 0.022 |
| GATA6-AS1    | - inf | 0.049 | LINC01372      | - inf | 0.041 |
| GBP1P1       | - inf | 0.043 | LINC01397      | - inf | 0.024 |
| GCNT7        | - inf | 0.050 | LINC01433      | - inf | 0.048 |
| GFI1B        | - inf | 0.029 | LINC01500      | - inf | 0.045 |
| GGNBP1       | - inf | 0.027 | LINC01556      | - inf | 0.016 |
| GGT8P        | - inf | 0.030 | LIPH           | - inf | 0.019 |
| GGTA1P       | - inf | 0.046 | LIP1           | - inf | 0.010 |
| GJB5         | - inf | 0.025 | LIPJ           | - inf | 0.018 |
| GLI3         | - inf | 0.049 | LMLN-AS1       | - inf | 0.019 |
| GLIS1        | - inf | 0.034 | LMNTD1         | - inf | 0.014 |
| GNAO1        | - inf | 0.026 | LOC100129046   | - inf | 0.019 |
| GNB3         | - inf | 0.022 | LOC100129083   | - inf | 0.018 |
| GOLGA6L3     | - inf | 0.020 | LOC100129316   | - inf | 0.022 |
| GOLGA8H      | - inf | 0.020 | LOC100130987   | - inf | 0.016 |
| GOLGA8S      | - inf | 0.039 | LOC100131315   | - inf | 0.030 |

|              |       |       |           |       |       |
|--------------|-------|-------|-----------|-------|-------|
| LOC100133050 | - inf | 0.024 | MIR3939   | - inf | 0.017 |
| LOC100422556 | - inf | 0.014 | MIR3945   | - inf | 0.016 |
| LOC100505915 | - inf | 0.012 | MIR4425   | - inf | 0.046 |
| LOC100506124 | - inf | 0.039 | MIR4453   | - inf | 0.025 |
| LOC100506281 | - inf | 0.028 | MIR4467   | - inf | 0.041 |
| LOC100506388 | - inf | 0.027 | MIR4484   | - inf | 0.038 |
| LOC100506444 | - inf | 0.025 | MIR450A1  | - inf | 0.033 |
| LOC100506457 | - inf | 0.012 | MIR450B   | - inf | 0.024 |
| LOC100506801 | - inf | 0.022 | MIR4512   | - inf | 0.025 |
| LOC100507283 | - inf | 0.043 | MIR4526   | - inf | 0.022 |
| LOC100507388 | - inf | 0.012 | MIR454    | - inf | 0.044 |
| LOC101559451 | - inf | 0.032 | MIR4637   | - inf | 0.030 |
| LOC101927018 | - inf | 0.021 | MIR4642   | - inf | 0.012 |
| LOC101927157 | - inf | 0.011 | MIR4644   | - inf | 0.018 |
| LOC101927190 | - inf | 0.027 | MIR4681   | - inf | 0.029 |
| LOC101927468 | - inf | 0.049 | MIR4690   | - inf | 0.034 |
| LOC101927668 | - inf | 0.040 | MIR4722   | - inf | 0.026 |
| LOC101927934 | - inf | 0.011 | MIR4725   | - inf | 0.017 |
| LOC101928436 | - inf | 0.024 | MIR4734   | - inf | 0.011 |
| LOC101929089 | - inf | 0.042 | MIR4740   | - inf | 0.047 |
| LOC101929162 | - inf | 0.017 | MIR4747   | - inf | 0.017 |
| LOC101929294 | - inf | 0.035 | MIR4758   | - inf | 0.011 |
| LOC101929378 | - inf | 0.036 | MIR4803   | - inf | 0.021 |
| LOC101929504 | - inf | 0.013 | MIR491    | - inf | 0.040 |
| LOC101929592 | - inf | 0.011 | MIR497HG  | - inf | 0.040 |
| LOC101929626 | - inf | 0.049 | MIR5009   | - inf | 0.029 |
| LOC101929762 | - inf | 0.024 | MIR5092   | - inf | 0.035 |
| LOC102723809 | - inf | 0.034 | MIR5194   | - inf | 0.015 |
| LOC102724450 | - inf | 0.007 | MIR548E   | - inf | 0.034 |
| LOC102724919 | - inf | 0.030 | MIR548L   | - inf | 0.037 |
| LOC284865    | - inf | 0.021 | MIR556    | - inf | 0.046 |
| LOC339059    | - inf | 0.017 | MIR5582   | - inf | 0.014 |
| LOC339666    | - inf | 0.015 | MIR5684   | - inf | 0.016 |
| LOC340512    | - inf | 0.024 | MIR5692C2 | - inf | 0.029 |
| LOC375196    | - inf | 0.012 | MIR593    | - inf | 0.047 |
| LOC440434    | - inf | 0.047 | MIR6079   | - inf | 0.003 |
| LOC645434    | - inf | 0.007 | MIR6084   | - inf | 0.011 |
| LOC91450     | - inf | 0.046 | MIR6125   | - inf | 0.027 |
| LOXL1-AS1    | - inf | 0.026 | MIR627    | - inf | 0.036 |
| LRP2         | - inf | 0.045 | MIR640    | - inf | 0.040 |
| LRRC18       | - inf | 0.036 | MIR641    | - inf | 0.038 |
| LRRC55       | - inf | 0.013 | MIR6499   | - inf | 0.037 |
| LRRN2        | - inf | 0.039 | MIR664B   | - inf | 0.050 |
| LUM          | - inf | 0.048 | MIR6736   | - inf | 0.037 |
| MAB21L1      | - inf | 0.034 | MIR6739   | - inf | 0.027 |
| MAGEA4       | - inf | 0.027 | MIR6766   | - inf | 0.019 |
| MCM8-AS1     | - inf | 0.030 | MIR6767   | - inf | 0.043 |
| MEF2C-AS1    | - inf | 0.021 | MIR6768   | - inf | 0.043 |
| MIR1238      | - inf | 0.020 | MIR6769A  | - inf | 0.029 |
| MIR1255A     | - inf | 0.024 | MIR6777   | - inf | 0.044 |
| MIR1273E     | - inf | 0.040 | MIR6799   | - inf | 0.015 |
| MIR1285-1    | - inf | 0.042 | MIR6806   | - inf | 0.015 |
| MIR1286      | - inf | 0.024 | MIR6810   | - inf | 0.031 |
| MIR1292      | - inf | 0.047 | MIR6812   | - inf | 0.042 |
| MIR1302-8    | - inf | 0.026 | MIR6823   | - inf | 0.015 |
| MIR1322      | - inf | 0.024 | MIR6831   | - inf | 0.023 |
| MIR137       | - inf | 0.037 | MIR6839   | - inf | 0.045 |
| MIR146A      | - inf | 0.034 | MIR6840   | - inf | 0.048 |
| MIR1913      | - inf | 0.021 | MIR6860   | - inf | 0.013 |
| MIR195       | - inf | 0.020 | MIR6867   | - inf | 0.019 |
| MIR219A1     | - inf | 0.011 | MIR6870   | - inf | 0.015 |
| MIR302D      | - inf | 0.021 | MIR6873   | - inf | 0.028 |
| MIR30C1      | - inf | 0.016 | MIR6878   | - inf | 0.041 |
| MIR3146      | - inf | 0.048 | MIR6880   | - inf | 0.048 |
| MIR3179-1    | - inf | 0.032 | MIR6889   | - inf | 0.026 |
| MIR3179-2    | - inf | 0.044 | MIR7114   | - inf | 0.045 |
| MIR3179-3    | - inf | 0.041 | MIR7846   | - inf | 0.019 |
| MIR3179-4    | - inf | 0.048 | MIR8061   | - inf | 0.019 |
| MIR3191      | - inf | 0.022 | MIR8064   | - inf | 0.022 |
| MIR3198-1    | - inf | 0.023 | MIR8083   | - inf | 0.024 |
| MIR331       | - inf | 0.043 | MIR9-2    | - inf | 0.001 |
| MIR3682      | - inf | 0.025 | MIRLET7G  | - inf | 0.030 |



|            |       |       |             |       |       |
|------------|-------|-------|-------------|-------|-------|
| MKRN2OS    | - inf | 0.017 | RPL23AP32   | - inf | 0.038 |
| MNX1-AS1   | - inf | 0.017 | RPRM        | - inf | 0.044 |
| MSGN1      | - inf | 0.019 | S100A7A     | - inf | 0.030 |
| MUSTN1     | - inf | 0.043 | SALL2       | - inf | 0.017 |
| MYH15      | - inf | 0.010 | SAMD3       | - inf | 0.030 |
| MYL10      | - inf | 0.014 | SBF1P1      | - inf | 0.045 |
| MYL4       | - inf | 0.021 | SCARNA1     | - inf | 0.034 |
| MYO18B     | - inf | 0.015 | SCARNA11    | - inf | 0.012 |
| MYO7B      | - inf | 0.037 | SCARNA22    | - inf | 0.041 |
| NEUROG2    | - inf | 0.027 | SCARNA3     | - inf | 0.039 |
| NKAPP1     | - inf | 0.048 | SCART1      | - inf | 0.032 |
| NOSTRIN    | - inf | 0.022 | SCHIP1      | - inf | 0.031 |
| NPAS4      | - inf | 0.025 | SDC4P       | - inf | 0.043 |
| NPC1L1     | - inf | 0.034 | SDK2        | - inf | 0.032 |
| NUCB1-AS1  | - inf | 0.016 | SEMA6A-AS1  | - inf | 0.014 |
| NUDT4P2    | - inf | 0.034 | SERPINA2    | - inf | 0.023 |
| NXPH1      | - inf | 0.013 | SERPINA9    | - inf | 0.012 |
| NXPH2      | - inf | 0.006 | SERPINB7    | - inf | 0.026 |
| OGFR-AS1   | - inf | 0.033 | SLAH3       | - inf | 0.019 |
| OGFRP1     | - inf | 0.010 | SIRPG       | - inf | 0.030 |
| OLIG3      | - inf | 0.025 | SLC13A5     | - inf | 0.039 |
| OR11L1     | - inf | 0.016 | SLC1A7      | - inf | 0.043 |
| OR1Q1      | - inf | 0.039 | SLC23A1     | - inf | 0.039 |
| OR2A42     | - inf | 0.036 | SLC24A5     | - inf | 0.043 |
| OR2AG2     | - inf | 0.043 | SLC28A3     | - inf | 0.043 |
| OR2L1P     | - inf | 0.050 | SLC30A10    | - inf | 0.038 |
| OR2M3      | - inf | 0.021 | SLC51B      | - inf | 0.035 |
| OR5B21     | - inf | 0.029 | SLC5A2      | - inf | 0.030 |
| P2RX2      | - inf | 0.035 | SLC6A17     | - inf | 0.023 |
| P2RX6P     | - inf | 0.022 | SLITRK3     | - inf | 0.050 |
| PAPPA-AS1  | - inf | 0.014 | SMCR5       | - inf | 0.032 |
| PARD3B     | - inf | 0.022 | SMIM1       | - inf | 0.014 |
| PCSK4      | - inf | 0.023 | SMTNL2      | - inf | 0.029 |
| PKN2-AS1   | - inf | 0.045 | SNAR-E      | - inf | 0.034 |
| PLA2R1     | - inf | 0.049 | SNORA28     | - inf | 0.020 |
| PLIN5      | - inf | 0.021 | SNORA36A    | - inf | 0.024 |
| PLP1       | - inf | 0.017 | SNORA37     | - inf | 0.024 |
| PMCH       | - inf | 0.028 | SNORA41     | - inf | 0.035 |
| PNCK       | - inf | 0.038 | SNORA51     | - inf | 0.021 |
| POM121L10P | - inf | 0.029 | SNORA58     | - inf | 0.031 |
| POM121L2   | - inf | 0.023 | SNORA70G    | - inf | 0.012 |
| PRAC2      | - inf | 0.033 | SNORA71C    | - inf | 0.043 |
| PRAP1      | - inf | 0.042 | SNORA74A    | - inf | 0.041 |
| PRCD       | - inf | 0.008 | SNORA77     | - inf | 0.036 |
| PRH2       | - inf | 0.022 | SNORD111B   | - inf | 0.039 |
| PRKACG     | - inf | 0.040 | SNORD116-13 | - inf | 0.007 |
| PRO1804    | - inf | 0.025 | SNORD116-20 | - inf | 0.048 |
| PROKR2     | - inf | 0.012 | SNORD116-22 | - inf | 0.024 |
| PRR36      | - inf | 0.021 | SNORD116-24 | - inf | 0.012 |
| PSPN       | - inf | 0.029 | SNORD119    | - inf | 0.010 |
| PTPRD      | - inf | 0.026 | SNORD12     | - inf | 0.030 |
| PTPRM      | - inf | 0.029 | SNORD124    | - inf | 0.020 |
| PTPRVP     | - inf | 0.019 | SNORD126    | - inf | 0.024 |
| RAB41      | - inf | 0.011 | SNORD127    | - inf | 0.044 |
| RAB6C-AS1  | - inf | 0.039 | SNORD14B    | - inf | 0.024 |
| RAET1E-AS1 | - inf | 0.048 | SNORD42B    | - inf | 0.013 |
| RASSF10    | - inf | 0.032 | SNORD45C    | - inf | 0.045 |
| REC114     | - inf | 0.020 | SNORD55     | - inf | 0.016 |
| REREP3     | - inf | 0.019 | SNORD75     | - inf | 0.017 |
| RGPD3      | - inf | 0.039 | SNORD88C    | - inf | 0.030 |
| RGPD4      | - inf | 0.019 | SNORD90     | - inf | 0.037 |
| RIBC1      | - inf | 0.020 | SPINK8      | - inf | 0.027 |
| RND2       | - inf | 0.027 | STAP2       | - inf | 0.029 |
| RNU4-1     | - inf | 0.046 | STKLD1      | - inf | 0.045 |
| RNU5F-1    | - inf | 0.024 | STPG2       | - inf | 0.041 |
| RNU6-15P   | - inf | 0.030 | SYCE1L      | - inf | 0.044 |
| RNU6-26P   | - inf | 0.038 | SYNJ2-IT1   | - inf | 0.049 |
| RNU6-48P   | - inf | 0.016 | TAS2R10     | - inf | 0.014 |
| RNU6-68P   | - inf | 0.036 | TAS2R30     | - inf | 0.026 |
| RNU6-82P   | - inf | 0.011 | TCEAL7      | - inf | 0.013 |
| RNU7-1     | - inf | 0.006 | TCF15       | - inf | 0.043 |
| RNVU1-4    | - inf | 0.023 | TEK         | - inf | 0.040 |

|                |       |       |             |       |       |
|----------------|-------|-------|-------------|-------|-------|
| TGM5           | - inf | 0.018 | TUBAL3      | - inf | 0.032 |
| TKTL2          | - inf | 0.043 | UGT3A2      | - inf | 0.015 |
| TLX3           | - inf | 0.041 | ULK4P3      | - inf | 0.023 |
| TMC3           | - inf | 0.017 | UNC5A       | - inf | 0.048 |
| TMED11P        | - inf | 0.029 | USP12-AS2   | - inf | 0.011 |
| TMEM114        | - inf | 0.015 | UTAT33      | - inf | 0.012 |
| TMEM125        | - inf | 0.045 | VIT         | - inf | 0.050 |
| TMEM156        | - inf | 0.038 | VNN2        | - inf | 0.030 |
| TMEM256-PLSCR3 | - inf | 0.034 | VSIG8       | - inf | 0.033 |
| TMIE           | - inf | 0.031 | VTN         | - inf | 0.030 |
| TNFRSF6B       | - inf | 0.048 | WFDC3       | - inf | 0.039 |
| TOMM20L        | - inf | 0.049 | WIF1        | - inf | 0.043 |
| TPRG1-AS2      | - inf | 0.041 | WSCD1       | - inf | 0.047 |
| TRIM6          | - inf | 0.022 | XDH         | - inf | 0.045 |
| TRIM6-TRIM34   | - inf | 0.048 | XLOC_007697 | - inf | 0.020 |
| TRIML1         | - inf | 0.025 | XPNPEP2     | - inf | 0.028 |
| TRPM3          | - inf | 0.024 | YY1P2       | - inf | 0.044 |
| TRPV4          | - inf | 0.049 | ZBED9       | - inf | 0.045 |
| TSIX           | - inf | 0.031 | ZBTB46-AS1  | - inf | 0.017 |
| TSPAN1         | - inf | 0.018 | ZNF197-AS1  | - inf | 0.020 |
| TSSC2          | - inf | 0.045 | ZNF334      | - inf | 0.035 |
| TTC9B          | - inf | 0.041 | ZNF415      | - inf | 0.018 |
| TTL13P         | - inf | 0.029 | ZNF728      | - inf | 0.011 |
| TTYH1          | - inf | 0.033 | ZNF804B     | - inf | 0.042 |

**Table S8** Results of GO enrichment analysis in HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 3  $\mu\text{g ml}^{-1}$  CdS QDs

| GO biological process complete                                                        | n of genes | Fold Enrichment | raw P-value<br>(as determined<br>by Fisher's exact test) | FDR<br>(as calculated by the Benjamini-<br>Hochberg procedure) |
|---------------------------------------------------------------------------------------|------------|-----------------|----------------------------------------------------------|----------------------------------------------------------------|
| phospholipase C-activating G-protein coupled acetylcholine receptor signaling pathway | 7          | 7.77            | 0.0000                                                   | 0.0028                                                         |
| cellular glucuronidation                                                              | 6          | 5.83            | 0.0001                                                   | 0.0103                                                         |
| flavonoid glucuronidation                                                             | 6          | 5.65            | 0.0001                                                   | 0.0102                                                         |
| positive regulation of calcium ion transport into cytosol                             | 7          | 5.18            | 0.0000                                                   | 0.0058                                                         |
| positive regulation of calcium ion-dependent exocytosis                               | 9          | 4.86            | 0.0004                                                   | 0.0350                                                         |
| activation of phospholipase C activity                                                | 12         | 4.78            | 0.0004                                                   | 0.0405                                                         |
| calcium ion transport into cytosol                                                    | 24         | 4.44            | 0.0001                                                   | 0.0145                                                         |
| membrane depolarization                                                               | 22         | 4.35            | 0.0003                                                   | 0.0338                                                         |
| cellular response to zinc ion                                                         | 52         | 4.09            | 0.0002                                                   | 0.0234                                                         |
| sodium-independent organic anion transport                                            | 55         | 4.06            | 0.0005                                                   | 0.0405                                                         |
| stabilization of membrane potential                                                   | 182        | 3.89            | 0.0002                                                   | 0.0246                                                         |
| potassium ion import                                                                  | 33         | 3.89            | 0.0003                                                   | 0.0299                                                         |
| positive regulation of Notch signaling pathway                                        | 34         | 3.30            | 0.0001                                                   | 0.0144                                                         |
| regulation of calcium ion-dependent exocytosis                                        | 15         | 3.11            | 0.0002                                                   | 0.0239                                                         |
| regulation of ion transmembrane transport                                             | 18         | 3.08            | 0.0000                                                   | 0.0050                                                         |
| potassium ion transport                                                               | 13         | 2.84            | 0.0004                                                   | 0.0395                                                         |
| adenylate cyclase-activating G-protein coupled receptor signaling pathway             | 11         | 2.80            | 0.0002                                                   | 0.0214                                                         |
| cation transmembrane transport                                                        | 9          | 2.59            | 0.0004                                                   | 0.0402                                                         |
| response to zinc ion                                                                  | 10         | 2.59            | 0.0000                                                   | 0.0041                                                         |
| potassium ion transmembrane transport                                                 | 8          | 2.57            | 0.0001                                                   | 0.0079                                                         |
| response to mechanical stimulus                                                       | 9          | 2.37            | 0.0000                                                   | 0.0032                                                         |
| sodium ion transmembrane transport                                                    | 10         | 2.34            | 0.0000                                                   | 0.0005                                                         |
| response to stimulus                                                                  | 5          | 2.26            | 0.0004                                                   | 0.0354                                                         |
| transmembrane receptor protein tyrosine kinase signaling pathway                      | 2          | 2.11            | 0.0000                                                   | 0.0023                                                         |
| calcium ion transmembrane transport                                                   | 1          | 2.09            | 0.0004                                                   | 0.0371                                                         |
| cell-cell signaling                                                                   | 1          | 1.96            | 0.0001                                                   | 0.0149                                                         |
| positive regulation of MAPK cascade                                                   | 10         | 1.92            | 0.0005                                                   | 0.0405                                                         |
| cell adhesion                                                                         | 53         | 1.80            | 0.0005                                                   | 0.0450                                                         |
| cell surface receptor signaling pathway                                               | 29         | 1.65            | 0.0006                                                   | 0.0517                                                         |
| ion transmembrane transport                                                           | 20         | 1.48            | 0.0007                                                   | 0.0585                                                         |
| transport                                                                             | 32         | 1.43            | 0.0008                                                   | 0.0652                                                         |
| signal transduction                                                                   | 4          | 1.38            | 0.0009                                                   | 0.0720                                                         |
| cell differentiation                                                                  | 39         | 1.31            | 0.0010                                                   | 0.0788                                                         |
| xenobiotic glucuronidation                                                            | 7          | 1.21            | 0.0010                                                   | 0.0855                                                         |
| negative regulation of glucuronosyltransferase activity                               | 6          | 1.17            | 0.0011                                                   | 0.0923                                                         |
| negative regulation of cellular glucuronidation                                       | 6          | 1.17            | 0.0012                                                   | 0.0990                                                         |

**Table S9** Results of GO enrichment analysis in HepG2 cells exposed to 2.3  $\mu\text{g ml}^{-1}$  Cd as 5.2  $\mu\text{g ml}^{-1}$  Cd(II)

| GO biological process complete                                                                                     | n of genes | Fold Enrichment | raw P-value<br>(as determined<br>by Fisher's exact test) | FDR<br>(as calculated by the Benjamini-<br>Hochberg procedure) |
|--------------------------------------------------------------------------------------------------------------------|------------|-----------------|----------------------------------------------------------|----------------------------------------------------------------|
| xenobiotic glucuronidation                                                                                         | 10         | 5.54            | 0.0004                                                   | 0.0148                                                         |
| negative regulation of cellular glucuronidation                                                                    | 14         | 5.54            | 0.0003                                                   | 0.0115                                                         |
| negative regulation of glucuronosyltransferase activity                                                            | 12         | 5.54            | 0.0016                                                   | 0.0488                                                         |
| cellular response to cGMP                                                                                          | 20         | 4.62            | 0.0001                                                   | 0.0060                                                         |
| cellular response to zinc ion                                                                                      | 34         | 3.50            | 0.0000                                                   | 0.0006                                                         |
| DNA unwinding involved in DNA replication                                                                          | 17         | 3.32            | 0.0017                                                   | 0.0493                                                         |
| microtubule depolymerization                                                                                       | 20         | 3.32            | 0.0015                                                   | 0.0452                                                         |
| protein localization to kinetochore                                                                                | 24         | 3.32            | 0.0014                                                   | 0.0425                                                         |
| negative regulation of DNA biosynthetic process                                                                    | 40         | 3.23            | 0.0001                                                   | 0.0059                                                         |
| negative regulation of growth                                                                                      | 40         | 3.21            | 0.0002                                                   | 0.0107                                                         |
| calcium ion transport into cytosol                                                                                 | 51         | 3.17            | 0.0001                                                   | 0.0059                                                         |
| DNA damage response, signal transduction by p53 class mediator resulting in transcription<br>of p21 class mediator | 50         | 3.12            | 0.0002                                                   | 0.0077                                                         |
| complement activation, alternative pathway                                                                         | 47         | 2.98            | 0.0003                                                   | 0.0138                                                         |
| negative regulation of endothelial cell apoptotic process                                                          | 113        | 2.97            | 0.0000                                                   | 0.0000                                                         |
| DNA replication initiation                                                                                         | 97         | 2.77            | 0.0001                                                   | 0.0034                                                         |
| cellular response to cadmium ion                                                                                   | 134        | 2.61            | 0.0000                                                   | 0.0011                                                         |
| DNA strand elongation involved in DNA replication                                                                  | 95         | 2.59            | 0.0006                                                   | 0.0228                                                         |
| mitotic sister chromatid segregation                                                                               | 175        | 2.44            | 0.0001                                                   | 0.0036                                                         |
| pindle organization                                                                                                | 481        | 2.42            | 0.0000                                                   | 0.0000                                                         |
| regulation of transcription involved in G1/S transition of mitotic cell cycle                                      | 205        | 2.41            | 0.0007                                                   | 0.0249                                                         |
| DNA synthesis involved in DNA repair                                                                               | 87         | 2.37            | 0.0009                                                   | 0.0290                                                         |
| positive regulation of mitotic nuclear division                                                                    | 24         | 2.34            | 0.0005                                                   | 0.0198                                                         |
| mitotic cytokinesis                                                                                                | 15         | 2.29            | 0.0003                                                   | 0.0122                                                         |
| DNA replication-dependent nucleosome assembly                                                                      | 17         | 2.08            | 0.0001                                                   | 0.0046                                                         |
| telomere maintenance via recombination                                                                             | 17         | 2.08            | 0.0001                                                   | 0.0037                                                         |
| regulation of mitotic nuclear division                                                                             | 15         | 2.08            | 0.0001                                                   | 0.0030                                                         |
| negative regulation of Wnt signaling pathway                                                                       | 11         | 2.02            | 0.0006                                                   | 0.0209                                                         |
| G1/S transition of mitotic cell cycle                                                                              | 17         | 2.01            | 0.0000                                                   | 0.0007                                                         |
| positive regulation of MAPK cascade                                                                                | 5          | 1.98            | 0.0004                                                   | 0.0146                                                         |
| positive regulation of cytosolic calcium ion concentration                                                         | 4          | 1.94            | 0.0009                                                   | 0.0289                                                         |
| microtubule-based movement                                                                                         | 4          | 1.92            | 0.0004                                                   | 0.0169                                                         |
| regulation of ion transmembrane transport                                                                          | 37         | 1.85            | 0.0000                                                   | 0.0023                                                         |
| cellular calcium ion homeostasis                                                                                   | 29         | 1.73            | 0.0005                                                   | 0.0178                                                         |
| response to hypoxia                                                                                                | 46         | 1.48            | 0.0005                                                   | 0.0200                                                         |
| cellular response to hypoxia                                                                                       | 25         | 1.44            | 0.0006                                                   | 0.0223                                                         |
| response to drug                                                                                                   | 77         | 1.40            | 0.0007                                                   | 0.0245                                                         |

**Table S10** Results of GO enrichment analysis in THP-1 cells exposed to 39  $\mu\text{g ml}^{-1}$  Cd as 50  $\mu\text{g ml}^{-1}$  CdS QDs

| GO biological process complete                                                                 | n of genes | Fold Enrichment | raw P-value<br>(as determined<br>by Fisher's exact test) | FDR<br>(as calculated by the Benjamini-<br>Hochberg procedure) |
|------------------------------------------------------------------------------------------------|------------|-----------------|----------------------------------------------------------|----------------------------------------------------------------|
| positive regulation of cAMP metabolic process                                                  | 6          | 11.50           | 0.0001                                                   | 0.0144                                                         |
| alkaloid catabolic process                                                                     | 3          | 11.50           | 0.0000                                                   | 0.0000                                                         |
| positive regulation of phospholipase C-activating G-protein coupled receptor signaling pathway | 3          | 11.50           | 0.0004                                                   | 0.0374                                                         |
| positive regulation of tyrosine phosphorylation of Stat4 protein                               | 3          | 8.60            | 0.0004                                                   | 0.0403                                                         |
| tyrosine phosphorylation of STAT protein                                                       | 3          | 8.60            | 0.0002                                                   | 0.0213                                                         |
| cellular response to zinc ion                                                                  | 12         | 7.20            | 0.0000                                                   | 0.0023                                                         |
| STAT protein import into nucleus                                                               | 3          | 6.90            | 0.0000                                                   | 0.0000                                                         |
| negative regulation of interleukin-6 biosynthetic process                                      | 3          | 6.90            | 0.0004                                                   | 0.0354                                                         |
| negative regulation of growth                                                                  | 11         | 6.60            | 0.0005                                                   | 0.0402                                                         |
| adenylate cyclase-inhibiting G-protein coupled glutamate receptor signaling pathway            | 4          | 6.50            | 0.0001                                                   | 0.0140                                                         |
| negative regulation of interleukin-10 production                                               | 6          | 5.70            | 0.0004                                                   | 0.0372                                                         |
| positive regulation of T-helper 1 type immune response                                         | 4          | 5.70            | 0.0006                                                   | 0.0472                                                         |
| G-protein coupled glutamate receptor signaling pathway                                         | 4          | 5.70            | 0.0005                                                   | 0.0414                                                         |
| drug catabolic process                                                                         | 3          | 5.70            | 0.0000                                                   | 0.0017                                                         |
| negative regulation of leukocyte apoptotic process                                             | 3          | 5.70            | 0.0005                                                   | 0.0465                                                         |
| chronic inflammatory response                                                                  | 4          | 5.10            | 0.0003                                                   | 0.0322                                                         |
| superoxide anion generation                                                                    | 6          | 4.90            | 0.0000                                                   | 0.0057                                                         |
| positive regulation of interferon-gamma biosynthetic process                                   | 5          | 4.80            | 0.0002                                                   | 0.0209                                                         |
| positive regulation of cAMP-mediated signaling                                                 | 5          | 4.80            | 0.0006                                                   | 0.0471                                                         |
| chemokine-mediated signaling pathway                                                           | 28         | 4.50            | 0.0000                                                   | 0.0043                                                         |
| positive regulation of interleukin-8 secretion                                                 | 5          | 4.40            | 0.0000                                                   | 0.0028                                                         |
| membrane hyperpolarization                                                                     | 4          | 4.20            | 0.0004                                                   | 0.0373                                                         |
| cellular response to interferon-gamma                                                          | 20         | 4.00            | 0.0004                                                   | 0.0369                                                         |
| positive regulation of release of sequestered calcium ion into cytosol                         | 9          | 3.80            | 0.0003                                                   | 0.0281                                                         |
| G-protein coupled receptor signaling pathway, coupled to cyclic nucleotide second messenger    | 15         | 3.70            | 0.0003                                                   | 0.0284                                                         |
| positive regulation of calcium ion import                                                      | 5          | 3.60            | 0.0004                                                   | 0.0401                                                         |
| acute inflammatory response                                                                    | 4          | 3.50            | 0.0000                                                   | 0.0019                                                         |
| cellular response to interleukin-1                                                             | 21         | 3.40            | 0.0006                                                   | 0.0492                                                         |
| superoxide metabolic process                                                                   | 6          | 3.40            | 0.0000                                                   | 0.0154                                                         |
| positive regulation of JAK-STAT cascade                                                        | 6          | 3.10            | 0.0001                                                   | 0.0286                                                         |
| regulation of cytosolic calcium ion concentration                                              | 8          | 2.90            | 0.0000                                                   | 0.0000                                                         |
| positive regulation of interleukin-12 production                                               | 6          | 2.80            | 0.0001                                                   | 0.0386                                                         |
| positive regulation of inflammatory response                                                   | 17         | 2.70            | 0.0001                                                   | 0.0255                                                         |
| cytokine-mediated signaling pathway                                                            | 27         | 2.40            | 0.0000                                                   | 0.0154                                                         |
| regulation of ion transmembrane transport                                                      | 23         | 2.40            | 0.0001                                                   | 0.0275                                                         |
| regulation of membrane potential                                                               | 16         | 2.40            | 0.0001                                                   | 0.0195                                                         |

**Table S11** Results of GO enrichment analysis in THP-1 cells exposed to 5  $\mu\text{g ml}^{-1}$  Cd as 11.4  $\mu\text{g ml}^{-1}$  Cd(II)

| GO biological process complete                                    | n of genes | Fold Enrichment | raw P-value<br>(as determined<br>by Fisher's exact test) | FDR<br>(as calculated by the Benjamini-<br>Hochberg procedure) |
|-------------------------------------------------------------------|------------|-----------------|----------------------------------------------------------|----------------------------------------------------------------|
| positive regulation of non-canonical Wnt signaling pathway        | 3          | 13.00           | 0.0012                                                   | 0.0388                                                         |
| regulation of cytokine biosynthetic process                       | 3          | 11.20           | 0.0001                                                   | 0.0035                                                         |
| positive regulation of macrophage cytokine production             | 3          | 11.20           | 0.0002                                                   | 0.0107                                                         |
| positive regulation of chemokine biosynthetic process             | 4          | 10.40           | 0.0010                                                   | 0.0321                                                         |
| positive regulation of programmed cell death                      | 3          | 9.80            | 0.0004                                                   | 0.0176                                                         |
| positive regulation of interferon-gamma secretion                 | 3          | 9.80            | 0.0013                                                   | 0.0412                                                         |
| cellular response to zinc ion                                     | 7          | 9.60            | 0.0006                                                   | 0.0216                                                         |
| negative regulation of growth                                     | 7          | 9.60            | 0.0010                                                   | 0.0326                                                         |
| cellular response to cadmium ion                                  | 6          | 9.20            | 0.0006                                                   | 0.0209                                                         |
| protein refolding                                                 | 5          | 8.70            | 0.0007                                                   | 0.0256                                                         |
| positive regulation of execution phase of apoptosis               | 3          | 8.70            | 0.0006                                                   | 0.0219                                                         |
| positive regulation of nitric-oxide synthase biosynthetic process | 4          | 8.00            | 0.0001                                                   | 0.0054                                                         |
| cellular response to interleukin-6                                | 4          | 7.40            | 0.0009                                                   | 0.0307                                                         |
| activation of MAPKKK activity                                     | 3          | 7.10            | 0.0006                                                   | 0.0221                                                         |
| positive regulation of interleukin-8 production                   | 7          | 7.00            | 0.0014                                                   | 0.0441                                                         |
| nitric oxide mediated signal transduction                         | 5          | 6.90            | 0.0001                                                   | 0.0056                                                         |
| positive regulation of Ras protein signal transduction            | 5          | 6.90            | 0.0008                                                   | 0.0257                                                         |
| positive regulation of calcium ion import                         | 4          | 6.50            | 0.0004                                                   | 0.0151                                                         |
| positive regulation of cAMP-mediated signaling                    | 3          | 6.50            | 0.0012                                                   | 0.0384                                                         |
| positive regulation of natural killer cell mediated cytotoxicity  | 4          | 5.80            | 0.0002                                                   | 0.0101                                                         |
| positive regulation of mitotic nuclear division                   | 5          | 5.00            | 0.0004                                                   | 0.0176                                                         |
| regulation of calcium ion-dependent exocytosis                    | 6          | 4.50            | 0.0000                                                   | 0.0027                                                         |
| positive regulation of cytokine production                        | 4          | 4.30            | 0.0011                                                   | 0.0340                                                         |
| positive regulation of cytokine secretion                         | 4          | 4.20            | 0.0006                                                   | 0.0219                                                         |
| regulation of ERK1 and ERK2 cascade                               | 4          | 4.20            | 0.0009                                                   | 0.0308                                                         |
| positive regulation of MAP kinase activity                        | 9          | 4.00            | 0.0002                                                   | 0.0109                                                         |
| defense response                                                  | 10         | 3.90            | 0.0012                                                   | 0.0368                                                         |
| positive regulation of cell division                              | 7          | 3.90            | 0.0000                                                   | 0.0002                                                         |
| release of sequestered calcium ion into cytosol                   | 6          | 3.80            | 0.0005                                                   | 0.0178                                                         |
| chemokine-mediated signaling pathway                              | 10         | 3.70            | 0.0006                                                   | 0.0221                                                         |
| positive regulation of inflammatory response                      | 10         | 3.60            | 0.0001                                                   | 0.0034                                                         |
| positive regulation of phagocytosis                               | 4          | 3.60            | 0.0000                                                   | 0.0000                                                         |
| vesicle fusion                                                    | 8          | 3.50            | 0.0005                                                   | 0.0178                                                         |
| positive regulation of interferon-gamma production                | 6          | 3.40            | 0.0001                                                   | 0.0036                                                         |
| cellular response to interferon-gamma                             | 7          | 3.20            | 0.0000                                                   | 0.0000                                                         |
| cellular response to interleukin-1                                | 8          | 2.90            | 0.0001                                                   | 0.0041                                                         |

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