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Potential key molecular correlations in laryngeal squamous cell carcinoma revealed by integrated analysis of mRNA, miRNA and lncRNA microarray profiles

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To uncover potential key genes, microRNAs (miRNAs) and long non-coding RNAs (lncRNAs) associated with laryngeal squamous cell carcinoma (LSCC), microarray data of mRNA, miRNAs and lncRNAs produced from matched sample pairs of LSCC and adjacent normal samples were used to this analysis. Differentially expressed genes (DEGs), miRNAs (DE-miRNAs) and lncRNAs (DE-lncRNAs) were identified, and functions and correlations of them were analyzed. In total, 826 DEGs, 44 DE-miRNAs and 347 DE-lncRNAs were identified. The up-regulated DEGs were mainly related to cell cycle, and the down-regulated DEGs were correlated with regulation of biological quality and extracellular region. Furthermore, *ATP1A2* was regulated by the lncRNA FLJ42875; *AQP1* and *TGFBR2* were targeted by LOC100505976; genes like *BUB1B* and *CENPE* were modulated by XLOC_l2_010636. Besides, genes like *FGF2* and *PIK3R1*, and lncRNAs like LOC100505976 and XLOC_l2_010636 were modulated by hsa-miR-424-5p. The expression levels of hsa-miR-424-5p, LOC100505976 and XLOC_l2_010636 as well as several DEGs were confirmed by quantitative real time polymerase chain reaction. These regulatory relationships of DEGs, DE-miRNAs and DE-lncRNAs might play pivotal roles in the tumorigenesis of LSCC.

Key words: laryngeal squamous cell carcinoma, differentially expressed gene, microRNA, long non-coding RNA, network

Laryngeal squamous cell carcinoma (LSCC), with highly invasive and metastatic malignant behavior, has the second highest incidence in all head and neck squamous cell carcinomas, especially in the northern area of China, including Shanxi Province [1, 2]. Despite recent advances in oncological and surgical treatments, the prognosis of advanced LSCC remains extremely poor. The overall 5-year survival rate is about 60% for LSCC [2, 3]. Therefore, a better understanding of molecular mechanisms underlying LSCC is particularly necessary for improving the prognosis of LSCC patients.

Genes, microRNAs (miRNAs) and long non-coding RNAs (lncRNAs) play pivotal roles in tumorigenesis and progression of cancer [4-6]. In the past years, a series of genes, miRNAs and lncRNAs have been identified as key factors in LSCC. For example, astrocyte elevated gene-1 (*AEG-1*) [7], chemokine (C-X-C motif) receptor 2 gene (*CXCR2*) [8], *ASAP1* [9], Alpha B-crystallin (αB-crystallin) [10] cyclin D1 and E-cadherin [11] are differentially expressed in LSCC tissues. Moreover, aberrant miRNA regulation has also been demonstrated to be associated with proliferation, migration or prognosis of LSCC, such as miRNA-34a/survivin [12], miR-370/FoxM1 [13], miR-21/MMP-2 [14], miR-155/(SOCS1 and STAT3) [15], and miR-19a/TIMP-2 [16]. Furthermore, in 2013, Li et al. discovered that lncRNA HOTAIR was up-regulated in LSCC, and it modulated PTEN methylation [17]. Additionally, several lncRNAs CDKN2B-AS1, HOTAIR and MALAT1 have been found to be novel molecular targets of cisplatin and paclitaxel in LSCC patients [18]. However, the molecular mechanisms underlying LSCC are still not fully understood.

Microarray analysis has been widely used to investigate pivotal molecular players in cancer. For instance, Lian et al. found that eight genes (*MCM2*, *MCM3*, *MCM4*, *CDK1*, *CDK2* and *CDK4*) were associated with tumorigenesis, and *EIF3A* and *RPN2* were involved in regional lymph node metastasis in LSCC using microarray gene expression analysis [19]. Based on the microarray microRNA expression analysis, Sun et al. discovered that 38 miRNAs were differentially expressed in supraglottic LSCC, such as miR-375, miR-1290, miR-139-3P and miR-106b [20]. Using a lncRNA expression profiling, Shen et al. found 684 upregulated lncRNAs and 747 downregulated lncRNAs in LSCC samples, and among them, low expression levels of RP11-169D4.1-001 and AC026166.2-001 were associated with poorer prognosis [21]. However, the relationships of genes, miRNAs and lncRNAs in LSCC were not well studied.

In this study, a microarray analysis of genes, miRNAs and lncRNAs in LSCC samples was performed. Differentially expressed genes (DEGs), miRNAs (DE-miRNAs) and lncRNAs (DE-lncRNAs) were identified between LSCC samples and adjacent normal mucosa epithelial tissue samples. After gene ontology (GO) and Kyoto Encyclopedia of Genes and Genomes (KEGG) pathway enrichment analyses, protein-protein interaction (PPI) analysis for DEGs was conducted. Furthermore, relationships between DEGs and DE-lncRNAs, DEGs and DE-miRNAs, as well as DE-miRNAs and DE-lncRNAs were respectively analyzed. Additionally, the DEGs and DE-lncRNAs modulated by the same DE-miRNAs were also identified, and the integrated regulatory network was constructed. These findings might provide a theoretical foundation for the further experimental studies and contribute to a further understanding of the molecular mechanisms underlying LSCC.

Patients and methods

Ethics statement. This study was conducted in accordance with the Helsinki declaration. Before surgery, all of patients signed a written, informed consent, acknowledging that they understood their rights and obligations. The study was approved by the Research Ethics Committee of Shanxi Medical University.

Patients. Six matched pairs of LSCC samples and control (adjacent normal mucosa epithelial tissue) samples were obtained from the department of otolaryngology head and neck surgery of the first hospital affiliated with Shanxi Medical University. Tissues were immediately frozen in liquid nitrogen and stored at -80°C for subsequent analysis. All of donors did not receive any chemoradiotherapy, biotherapy and molecular targeted therapy; and none of them had the history of hepatitis A, B and C, syphilis, human papillomavirus and human immunodeficiency virus infection, as well as chronic disease and genetic familiar disease. The detailed information of donors is listed in Table 1.

RNA isolation and microarray hybridization. Tissue samples were shattered by a homogenizer (IKA, Staufen, Germany). Total RNA for mRNA and lncRNA microarray preparation was extracted by TRIzol reagent (Invitrogen, Carlsbad, CA, USA), whereas, total RNA for miRNA microarray preparation was isolated using mirVana™ miRNA Isolation Kit (Ambion, Austin, TX, US), and then purified by miRNeasy Mini Kit (QIAGEN, GmBH, Germany). The integrity of RNA was inspected by Agilent Bioanalyzer 2100 (Agilent Technologies, Santa Clara, CA, USA).

The RNA was amplified and reverse-transcribed to cDNA after purification. Afterwards, according to the manufacturer's instructions, the cDNA was labeled and homogenized. For mRNA and lncRNA microarray, the labeling was performed by Agilent Quick Amp Labeling Kit (Agilent Technologies, Santa Clara, CA, USA), and hybridization was performed on the human lncRNA (4*180K) Array (Agilent Technologies, Santa Clara, CA, USA) via Gene Expression Hybridization Kit (Agilent Technologies, Santa Clara, CA, USA) in a hybridization oven (Agilent, Santa Clara, CA, USA) at 65 °C for 17 h. For miRNA microarray, the labeling was performed by miRNA Complete Labeling and Hyb Kit (Agilent technologies, Santa Clara, CA, USA), and hybridization was performed on the human miRNA (8*60K) v19.0 Array in a hybridization oven (Agilent, Santa Clara, CA, USA) at 55 °C for 20 h. After hybridization, slides were washed in staining dishes (Thermo Shandon, Waltham, MA, USA) with Gene Expression Wash Buffer Kit (Agilent technologies, Santa Clara, CA, USA).

Slides were scanned by Feature Extraction software 10.7 (Agilent technologies, Santa Clara, CA, USA) with default settings and Agilent Microarray Scanner (Agilent technologies, Santa Clara, CA, USA). Raw data were normalized by quantile

Table 1. The pathological information of patients

Patients No.	Gender	Age	Type	Degree of differentiation	Patho-T staging	Lymphatic metastasis	Distant metastasis	Clinical staging
1	Female	61	Supraglottic	Low	T1	N0	M0	I
2	Male	75	Supraglottic	Low	T2	N0	M0	II
3	Male	58	Glottic	Low	T3	N0	M0	III
4	Male	60	Glottic	High	T4	N1	M0	IV
5	Male	73	Supraglottic	Moderate	T2	N1	M0	III
6	Male	54	Supraglottic	Moderate	T4	N2	M0	IV

algorithm, Gene Spring Software 11.0 (Agilent technologies, Santa Clara, CA, USA).

Screening of DEGs, DE-miRNAs and DE-lncRNAs. The Linear Models for Microarray Data (LIMMA) package [22] in R was used to identify DEGs, DE-miRNAs and DE-lncRNAs between LSCC and control samples. The raw *p*-value was adjusted by Benjamin and Hochberg method [23], and the cut-off criteria were $|\log_2 FC \text{ (fold change)}| > 1.58$ and adjusted p-value < 0.01. Afterwards, hierarchical clustering was conducted using pheatmap package [24].

Enrichment analysis of DEGs. The GO and KEGG pathway enrichment analyses of DEGs were performed by DAVID (the Database for Annotation, Visualization and Integrated Discovery, http://david.abcc.ncifcrf.gov/) [25]. The p-value < 0.01 and p-value < 0.05 were respectively used as the cut-off criterion for GO and KEGG pathway enrichment analyses.

Construction of PPI network for DEGs. The STRING (Search Tool for the Retrieval of Interacting Genes, http://string-db.org/) database, which provides both predicted and experimental interaction information of proteins [26], was used to analyze the PPIs for DEGs by calculating the combined score (threshold: score > 0.9). Afterwards, Cytoscape (http://cytoscape.org/) [27] was utilized to visualize the PPI network of DEGs. In the PPI network, each node represents a protein and each edge (between two nodes) represents an interaction between these two proteins.

Correlation analysis for DEGs, DE-miRNAs and DE-lncRNAs. Correlated DE-lncRNAs and DEGs pairs were identified by calculating Pearson correlation coefficient based on their expression levels. Only the pairs with |coefficient| ≥ 0.95 were considered as co-expressed pairs, which were visualized in a network by Cytoscape.

Furthermore, target genes of DE-miRNAs were predicted using TargetScan V6.2 (http://www.targetscan.org/) [28]. Meanwhile, regulatory relationships between DE-miRNAs and lncRNAs were predicted by miRanda, which functions as an algorithm to find the genomic targets of miRNAs (available at http://www.microrna.org/microrna/getDownloads.do) [29]. Based on the predicted information of regulatory relationships, the regulatory pairs of DE-miRNAs and DEGs as well as DE-miRNAs and DE-lncRNAs that have opposite expression trends with each others were then selected to construct the regulatory networks, which were visualized by Cytoscape.

Additionally, based on the above identified relationships between DEGs and DE-miRNAs, as well as DE-miRNAs and DE-lncRNAs, the DEGs and DE-lncRNAs regulated by the same DE-miRNAs were filtered out. According to the above identified co-expressed relationships between DEGs and DE-lncRNAs, the integrated regulatory network of DE-miRNAs was visualized by Cytoscape.

Quantitative real time polymerase chain reaction (qRT-PCR) assay. In the experimental validation assay, another 21 sample pairs of LSCC and matched adjacent normal mucosa (ANM) epithelial tissue were obtained from 21 LSCC patients in the first hospital affiliated with Shanxi Medical University. All of donors did not receive any chemoradiotherapy, biotherapy and molecular targeted therapy; and none of them had the history of hepatitis A, B and C, syphilis, human papillomavirus and human immunodeficiency virus infection, as well as chronic disease and genetic familiar disease. The information of clinicopathological features of the 21 patients was listed in Table S1.

The total RNA for mRNA and lncRNA expression detection was extracted and purified using TriZol reagent (Invitrogen, Carlsbad, CA, USA) according to the manufacturer's protocol. After the quality detection, total RNA was reverse transcribed using Moloney Murine Leukemia Virus (M-MLV) reverse transcriptase (Promega, Madison, Wisconsin, USA). After cDNA synthesis, mRNA and lncRNA expression levels were measured using SYBR green qPCR supermix (Bio-Rad, Hercules, CA, USA).

Furthermore, the total RNA for miRNA expression detection was isolated using the mirVana™ miRNA Isolation Kit (Ambion, Austin, TX, USA) and purified by the miRNeasy Mini Kit (QIAGEN, GmBH, Germany). miRNA expression levels were determined using the mirVana™ qPCR detection kit (Ambion, Austin, TX, USA). Primers were designed using the Primer5 software (PRIMER-E Ltd, Plymouth, UK) and listed in Table S2. Each PCR was repeated at least three times.

Relative gene and miRNA expression was calculated using the $2^{-\Delta\Delta Ct}$ method [30]. The expression levels of mRNAs and lncRNAs were normalized against glyceraldehyde-3-phosphate dehydrogenase (GAPDH), and the expression level of the miRNA was normalized against U6 small nuclear RNA.

Statistics. The fold change of relative expression was presented as the median±inter-quartile range. Statistical analysis was performed using the SPSS 19.0 software (SPSS, Chicago, USA). Differences in mRNA expression levels of genes and miRNA between LSCC and ANM were analyzed by Mann-Whitney test, and considered significant if $P < 0.05$.

Results

Identification of DEGs, DE-miRNAs and DE-lncRNAs. Totally, 826 DEGs (352 up-regulated ones and 474 down-regulated ones), 347 DE-lncRNAs (181 up-regulated ones and 166 down-regulated ones) and 44 DE-miRNAs (34 up-regulated ones and 10 down-regulated ones) were identified by comparing LSCC and control samples (Supplementary file).

The hierarchical cluster analysis of the data revealed that LSCC samples were accurately distinguished from normal control samples using the DEGs, DE-miRNAs and DE-lncRNAs (Figure 1).

Enrichment analysis of up- and down-regulated DEGs. To further investigate the potential biological functions of the DEGs, GO and pathway enrichment analyses were conducted. According to the GO enrichment analysis, the up-regulated DEGs were mainly enriched in GO terms related to cell cycle, such as mitotic cell cycle (e.g. *BUB1B*, *CCNA2*, *CDCA2*, *CDKN3* and *CENPE*), chromosome (e.g. *BUB1B*, *CCNB1*, *CENPE*

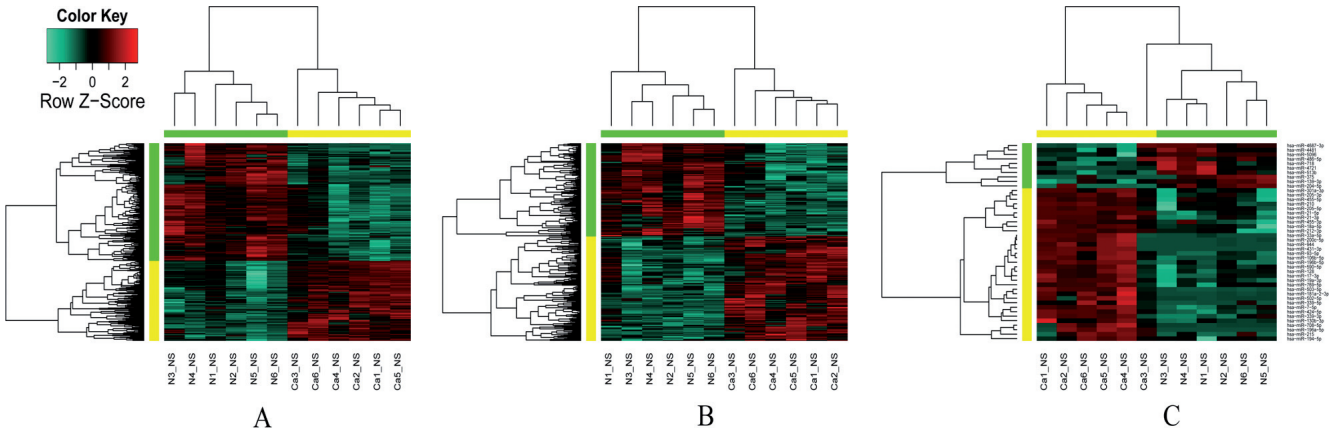

Figure 1. Hierarchical cluster analysis for the differentially expressed genes (A), lncRNAs (B) and miRNAs (C) in the laryngeal squamous cell carcinoma (LSCC) samples and adjacent normal mucosa epithelial tissue samples. N1-N6 represent normal control samples; Ca1-Ca6 represent LSCC samples. Each row represents a single gene, lncRNAs or miRNAs; each column represents a tissue sample. The gradual color change from green to red represents the changing process from upregulation to downregulation. The green bars in rows mean the adjacent normal mucosa epithelial tissue samples, and the yellow bars in rows mean the LSCC samples. The green and yellow bars in columns represent two different clusters due to the different expression of molecules.

and *KIF11*) and protein binding (e.g. *CENPE*, *KIF11* and *MCM2*) (Table 2). Meanwhile, the main pathways enriched by the down-regulated DEGs included regulation of biological quality (e.g. *AQP1*, *ATP10B* and *CCL14*), extracellular region (e.g. *ADAMTS1*, *AQP1* and *CCL14*) and glycosaminoglycan binding (e.g. *FGF2*, *FGF7* and *TGFBR2*) (Table 3).

Based on the pathway enrichment analysis, the up-regulated DEGs were significantly enriched in 16 pathways, such as cell cycle (e.g. *BUB1B*, *CCNA2* and *MCM2*), ECM-receptor interaction (e.g. *COL1A1*, *ITGA11* and *LAMA3*) and focal adhesion (e.g. *COL1A1*, *ITGA11* and *LAMA3*) (Table 4). Meanwhile, the down-regulated DEGs were markedly enriched in 18 pathways,

Table 2. The top 5 enriched GO terms for the up-regulated differentially expressed genes respectively in biological process (BP), cellular component (CC) and molecular function (MF)

Category	ID	Description	Count	*p*-value	Genes
BP	GO:0000278	mitotic cell cycle	78	0	*BUB1B CCNA2 CCNB1 CDCA2 CDCA3 CDKN3 CENPE E2F1 KIF11 MCM2…*
	GO:0000280	nuclear division	56	0	*BUB1B CCNA2 CCNB1 CDCA2 CDKN3 CENPE E2F1 KIF11 MCM2 WNT4…*
	GO:0006996	organelle organization	102	0	*ACTA1 BUB1B CCNA2 CDK1 CENPE KIF11 PTTG1 SGOL2 UBE2C WNT4…*
	GO:0007049	cell cycle	96	0	*BUB1B CCNA2 CCNB1 CDCA2 CDCA3 CDKN3 CENPE E2F1 KIF11 MCM2…*
	GO:0007059	chromosome segregation	26	0	*BUB1 CCNB1 CDCA5 CENPE KIF11 KIF2C NDC80 NUSAP1 PLK1 PTTG1…*
CC	GO:0000775	chromosome	161	0	*BUB1B CBX2 CCNB1 CDCA8 CENPE KIF2C MKI67 NCAPD2 SGOL1 ZWINT…*
	GO:0000777	condensed chromosome kinetochore	19	0	*BUB1B CCNB1 CENPE KIF2C KNSTRN MAD2L1 NDC80 PLK1 SGOL1 SGOL2…*
	GO:0000793	condensed chromosome	25	0	*BUB1B CCNB1 CENPE KIF2C KNSTRN NCAPD2 NDC80 SGOL1 SPC24 ZWINT…*
	GO:0005694	chromosome	55	0	*BUB1B CBX2 CCNB1 CDCA8 CENPE KIF2C MKI67 NCAPD2 SGOL1 ZWINT…*
	GO:0032993	protein-DNA complex	31	0	*BUB1B CCNB1 CDCA8 CENPE KIF2C MKI67 NCAPD2 SGOL1 ZWINT SPC24…*
MF	GO:0005515	protein binding	181	3.43E-05	*BIRC5 CENPE KIF11 KIF15 KIF20A KIF2C NUSAP1 PLK1 PRC1 RACGAP1…*
	GO:0008017	microtubule binding	15	0.000466	*BIRC5 CENPE KIF11 KIF15 KIF20A KIF2C NUSAP1 PLK1 PRC1 RACGAP1…*
	GO:0003777	microtubule motor activity	10	0.001904	*CENPE DNAH14 KIF11 KIF14 KIF15 KIF20A KIF20B KIF23 KIF26B KIF2C*
	GO:0015631	tubulin binding	15	0.028714	*BIRC5 CENPE KIF11 KIF26B KIF2C MAP6D1 NUSAP1 PLK1 PRC1 RACGAP1…*
	GO:0048407	platelet-derived growth factor binding	4	0.084939	*COL1A1 COL3A1 COL4A1 COL5A1*

Table 3. The top 5 enriched GO terms for the down-regulated differentially expressed genes respectively in biological process (BP), cellular component (CC) and molecular function (MF)

Category	ID	Description	Count	*p*-value	Genes
BP	GO:0065008	regulation of biological quality	116	2.31E-09	*AQP1 ATP1A2 CCL14 CD24 CPLX3 CTGF CYBRD1 CYP1B1 FGF2 HBD…*
	GO:0044707	single-multicellular organism process	195	3.09E-08	*ASPA ID4 IGF1 LAMA2 LGI4 NCMAP NTF3 NTRK3 PPAP2B SOX10…*
	GO:0048251	elastic fiber assembly	5	1.24E-07	*FBLN5 MFAP4 MYH11 THSD4 TNXB*
	GO:0010001	glial cell differentiation	17	1.58E-07	*ASPA CLU ID4 IGF1 IL6ST NCMAP NTF3 NTRK3 PPAP2B SOX10…*
	GO:0032501	multicellular organismal process	196	3.59E-07	*ASPA ID4 IGF1 IL6ST LAMA2 NCMAP NTF3 NTRK3 PPAP2B SOX10…*
CC	GO:0005576	extracellular region	188	0	*AQP1 CCL14 CD34 COL14A1 CXCL12 FAM20A FGF2 FGF7 IGFBP5 SLC12A2…*
	GO:0005615	extracellular space	80	0	*ANG ANGPTL1 CCL19 FBLN1 GDF1 HBD IGF1 IL16 PI16 TFF1…*
	GO:0044421	extracellular region part	164	0	*AQP1 BMP6 C16orf89 CCL14 CD59 COL21A1 CRLF1 CST3 SLC12A2 TFF3…*
	GO:0043230	extracellular organelle	118	2.68E-13	*AQP1 C16orf89 CD59 GPD1 GPRC5B SELENBP1 SEMA3B SLC12A2 ST3GAL4 THSD4…*
	GO:0065010	extracellular membrane-bounded organelle	118	2.68E-13	*AQP1 C16orf89 CD59 GPD1 GPRC5B SELENBP1 SEMA3B SLC12A2 ST3GAL4 THSD4…*
MF	GO:0005539	glycosaminoglycan binding	20	1.03E-08	*ABI3BP ADAMTS1 ANG CFH CLEC3B CTGF CTSG FGF2 FGF7 TGFBR2 TNXB…*
	GO:0008201	heparin binding	16	1.12E-07	*ABI3BP ADAMTS1 ANG CFH CLEC3B CTGF CTSG FGF2 FGF7 NDNF…*
	GO:1901681	sulfur compound binding	17	4.47E-06	*ABI3BP CFH CLEC3B CTGF FGF2 FGF7 NDNF PCOLCE2 SMOC2 SOD3 TNXB…*
	GO:0004879	ligand-activated sequence-specific DNA binding RNA polymerase II transcription factor activity	8	1.34E-05	*AR ESR1 NKX3-1 NR2F1 NR2F2 PPARG PTGER3 RORC*
	GO:0098531	direct ligand regulated sequence-specific DNA binding transcription factor activity	8	1.34E-05	*AR ESR1 NKX3-1 NR2F1 NR2F2 PPARG PTGER3 RORC*

Table 4. The top 10 enriched pathways for the up-regulated differentially expressed genes

ID	Description	Count	*p*-value	Genes
04110	Cell cycle	21	1.11E-15	*BUB1B CCNA2 CCNB1 CDK1 CHEK1 E2F1 MCM2 PKMYT1 PLK1 PTTG1…*
04512	ECM-receptor interaction	15	1.07E-11	*COL1A1 COL3A1 COL4A1 COL4A6 COL5A1 COL5A2 ITGA11 ITGA3 LAMA3SPP1 THBS2…*
04114	Oocyte meiosis	13	5.61E-08	*AURKA BUB1 CCNB1 CDK1 MAPK12 PKMYT1 PLK1 PTTG1 PTTG2 SGOL1…*
05222	Small cell lung cancer	10	1.87E-06	*CKS1B COL4A1 COL4A6 E2F1 FN1 ITGA3 LAMA3 LAMB3 LAMC2 SKP2*
05146	Amoebiasis	11	1.97E-06	*COL1A1 COL3A1 COL4A1 COL4A6 COL5A1 FN1 IL1B LAMA3 LAMB3 LAMC2…*
04510	Focal adhesion	14	8.57E-06	*COL1A1 COL3A1 COL4A1 COL5A1 FN1 ITGA11 ITGA3 LAMA3 LAMB3 THBS2…*
05200	Pathways in cancer	18	1.15E-05	*BIRC5 COL4A1 COL4A6 E2F1 FN1 ITGA3 LAMA3 MMP1 SLC2A1 WNT4…*
04914	Progesterone-mediated oocyte maturation	9	1.66E-05	*BUB1 CCNA2 CCNB1 CCNB2 CDK1 MAD2L1 MAPK12 PKMYT1 PLK1*
04115	p53 signaling pathway	8	2.12E-05	*BID CCNB1 CCNB2 CDK1 CHEK1 IGFBP3 RRM2 SERPINE1*
03030	DNA replication	6	3.21E-05	*FEN1 MCM2 MCM4 MCM5 POLE2 RFC4*

such as drug metabolism-cytochrome P450 (e.g. *ADH1A*, *CYP2C9* and *FMO2*), salivary secretion (e.g. *AMY1C*, *AQP5* and *ATP1A2*) and metabolism of xenobiotics by cytochrome P450 (e.g. *ADH1A*, *CYP1B1* and *GSTA2*) (Table 5).

Analysis of PPI network for DEGs. To further reveal the potential protein interactions of DEGs, PPIs of the DEGs were predicted. The PPI network for the up- and down-regulated DEGs contained 255 proteins and 1135 interactions (Figure 2). The up-regulated DEGs that have a higher connective degree were *CDK1* (degree = 55), *CCNA2* (degree = 54), *BUB1* (degree = 52) and *CDC20* (degree = 49). Meanwhile, the down-regulated DEGs that have a higher connective degree were *COL21A1* (degree = 9), *COL28A1* (degree = 9), *IGF1* (degree = 9) and *COL14A1* (degree = 9) (Table 6).

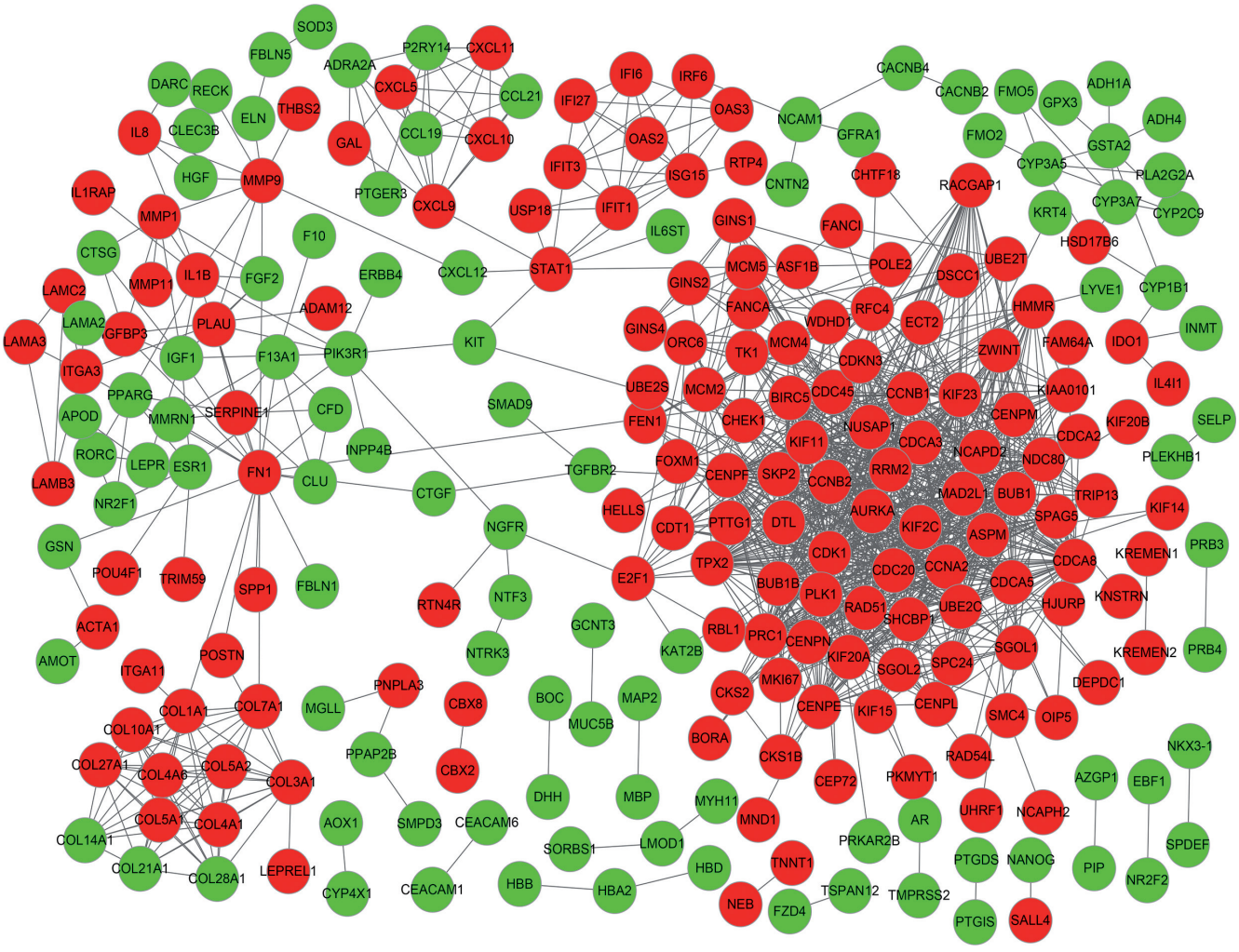

Figure 2. Protein-protein interaction network of differentially expressed genes. Red nodes represent the up-regulated genes, and green nodes represent down-regulated genes.

Co-expression network analysis for DEGs and DE-lncRNAs. To reveal the correlations between DEGs and DE-lncRNAs as well as potential functions of DE-lncRNAs, co-expressed pairs were identified using Pearson correlation coefficient, and pathway enrichment analysis of DEGs that were regulated by DE-lncRNAs was carried out. Totally, there were 505 co-expression relationships between DEGs and DE-lncRNAs, involving 268 DEGs and 118 DE-lncRNAs

Table 5. The top 10 enriched pathways for the down-regulated differentially expressed genes

ID	Description	Count	*p*-value	Genes
00982	Drug metabolism – cytochrome P450	9	6.06E-05	*ADH1A ADH4 AOX1 CYP2C9 CYP3A5 CYP3A7 FMO2 FMO5 GSTA2*
04970	Salivary secretion	9	0.000285	*AMY1C AQP5 ATP1A2 KCNMA1 KCNN4 MUC5B PRB1 PRH2 SLC12A2*
05144	Malaria	6	0.001375	*HBA2 HBB HBD HGF KLRB1 SELP*
00980	Metabolism of xenobiotics by cytochrome P450	7	0.001591	*ADH1A ADH4 CYP1B1 CYP2C9 CYP3A5 CYP3A7 GSTA2*
00350	Tyrosine metabolism	5	0.002961	*ADH1A ADH4 AOC3 AOX1 HGD*
00591	Linoleic acid metabolism	4	0.005659	*CYP2C9 CYP3A5 CYP3A7 PLA2G2A*
04610	Complement and coagulation cascades	6	0.006402	*C7 CFD CFH F10 F13A1 PROS1*
05218	Melanoma	6	0.007351	*FGF13 FGF2 FGF7 HGF IGF1 PIK3R1*
05143	African trypanosomiasis	4	0.009844	*HBA2 HBB HBD HPR*
00590	Arachidonic acid metabolism	5	0.013959	*CYP2C9 GPX3 PLA2G2A PTGDS PTGIS*

Table 6. The up-regulated genes with the connectivity degree > 40 and down-regulated genes with the connectivity degree > 6 in the protein-protein interaction network

Up-regulated DEGs	Connective degree	Down-regulated DEGs	Connective degree
CDK1	55	*COL21A1*	9
CCNA2	54	*COL28A1*	9
BUB1	52	*IGF1*	9
CDC20	49	*COL14A1*	9
CDCA8	47	*P2RY14*	8
CCNB1	46	*PIK3R1*	8
MAD2L1	43	*CCL19*	7
KIF11	43	*ESR1*	7
BIRC5	42	*GSTA2*	7
NDC80	42		
TPX2	41		

(Supplementary file). For instance, FLJ42875 regulated *ATP1A2*; LOC100505976 targeted *AQP1*, *CXCL12* and *TGFBR2*; XLOC_l2_010636 modulated *BUB1B*, *CCNA2*, *CCNB1*, *CDCA2*, *CDKN3* and *CENPE* (Figure 3). In the co-expression network, the DE-lncRNAs FLJ42875 (degree = 26) and XLOC_l2_00944 (degree = 25), as well as the DEGs *KNSTRN* (degree = 7) and *AKAP12* (degree = 7), had a higher connective degree.

Additionally, DEGs modulated by LOC100652832 were mainly enriched in the pathways of cell cycle (e.g. *CCNB1*, *CDC20* and *PLK1*), progesterone-mediated oocyte maturation (e.g. *CCNB1* and *PLK1*) and oocyte meiosis (e.g. *CCNB1*, *CDC20* and *PLK1*); several DEGs regulated by LOC100506027 (e.g. *COL1A1*, *COL3A1*, *COL5A1* and *COL5A2*) were distinctly enriched in the pathways of focal adhesion, protein digestion and absorption, ECM-receptor interaction and amoebiasis (Table 7).

Correlation analysis for DE-miRNAs and DEGs. The regulatory network consisting of DE-miRNAs and DEGs contained 34 DE-miRNAs, 163 DEGs, and 411 regulatory relationships (Figure 4; Supplementary file). For example, upregulated hsa-miR-424-5p (degree = 35) was predicted to regulate genes like *FGF2*, *FGF7*, *IGF1* and *PIK3R1*; upregulated hsa-miR-106b-5p (degree = 28) was predicted to target genes like *TGFBR2*.

Correlation analysis for DE-miRNAs and DE-lncRNAs. Totally, there were 40 DE-miRNAs, 222 DE-lncRNAs and

Table 7. The enriched pathways for the differentially expressed genes co-expressed with differentially expressed lncRNAs in the co-expression network

LncRNA	ID	Description	*p*-value	Genes
XLOC_l2_010636	4114	Oocyte meiosis	0.011905	*CCNB1 SGOL1*
	4914	Progesterone-mediated oocyte maturation	0.007147	*CCNA2 CCNB1*
	4110	Cell cycle	0.000705	*BUB1B CCNA2 CCNB1*
LOC100652832	4110	Cell cycle	9.21E-06	*CCNB1 CDC20 PLK1*
	4914	Progesterone-mediated oocyte maturation	0.000631	*CCNB1 PLK1*
	4114	Oocyte meiosis	6.77E-06	*CCNB1 CDC20 PLK1*
XLOC_l2_009441	4110	Cell cycle	0.000477	*CDC20 CHEK1 PLK1*
	4114	Oocyte meiosis	0.000353	*CDC20 PLK1 SGOL1*
LOC100507309	4110	Cell cycle	0.002584	*E2F1 MCM5*
	4114	Oocyte meiosis	0.002112	*AURKA SGOL1*
LOC100506303	5200	Pathways in cancer	0.008889	*CKS1B SKP2*
	5222	Small cell lung cancer	0.000616	*CKS1B SKP2*
LOC100506027	4510	Focal adhesion	1.31E-06	*COL1A1 COL3A1 COL5A1 COL5A2*
	4974	Protein digestion and absorption	3.37E-08	*COL1A1 COL3A1 COL5A1 COL5A2*
	4512	ECM-receptor interaction	4.10E-08	*COL1A1 COL3A1 COL5A1 COL5A2*
	5146	Amoebiasis	1.01E-07	*COL1A1 COL3A1 COL5A1 COL5A2*
LOC339524	380	Tryptophan metabolism	0.000149	*AOX1 INMT*
XLOC_l2_002952	4970	Salivary secretion	0.001338	*PRB1 SLC12A2*
MAGI2-AS3	5200	Pathways in cancer	0.027505	*AR FZD4*
LOC100507165	4060	Cytokine-cytokine receptor interaction	0.005912	*CCL14 IL6ST*
LOC100131825	4610	Complement and coagulation cascades	0.001982	*CFH F10*
LOC400128	4970	Salivary secretion	3.30E-06	*AQP5 PRB1 PRH2 SLC12A2*
	4144	Endocytosis	0.02852	*ERBB4 FOLR1*
LOC100505976	4670	Leukocyte transendothelial migration	0.010033	*CXCL12 JAM2*
	4360	Axon guidance	0.012308	*CXCL12 SLIT3*
	4060	Cytokine-cytokine receptor interaction	0.047495	*CXCL12 TGFBR2*
LOC400456	4670	Leukocyte transendothelial migration	0.003725	*CXCL12 JAM2*
FLJ42875	4970	Salivary secretion	0.002207	*AMY1C ATP1A2*
	4973	Carbohydrate digestion and absorption	0.000542	*AMY1C ATP1A2*

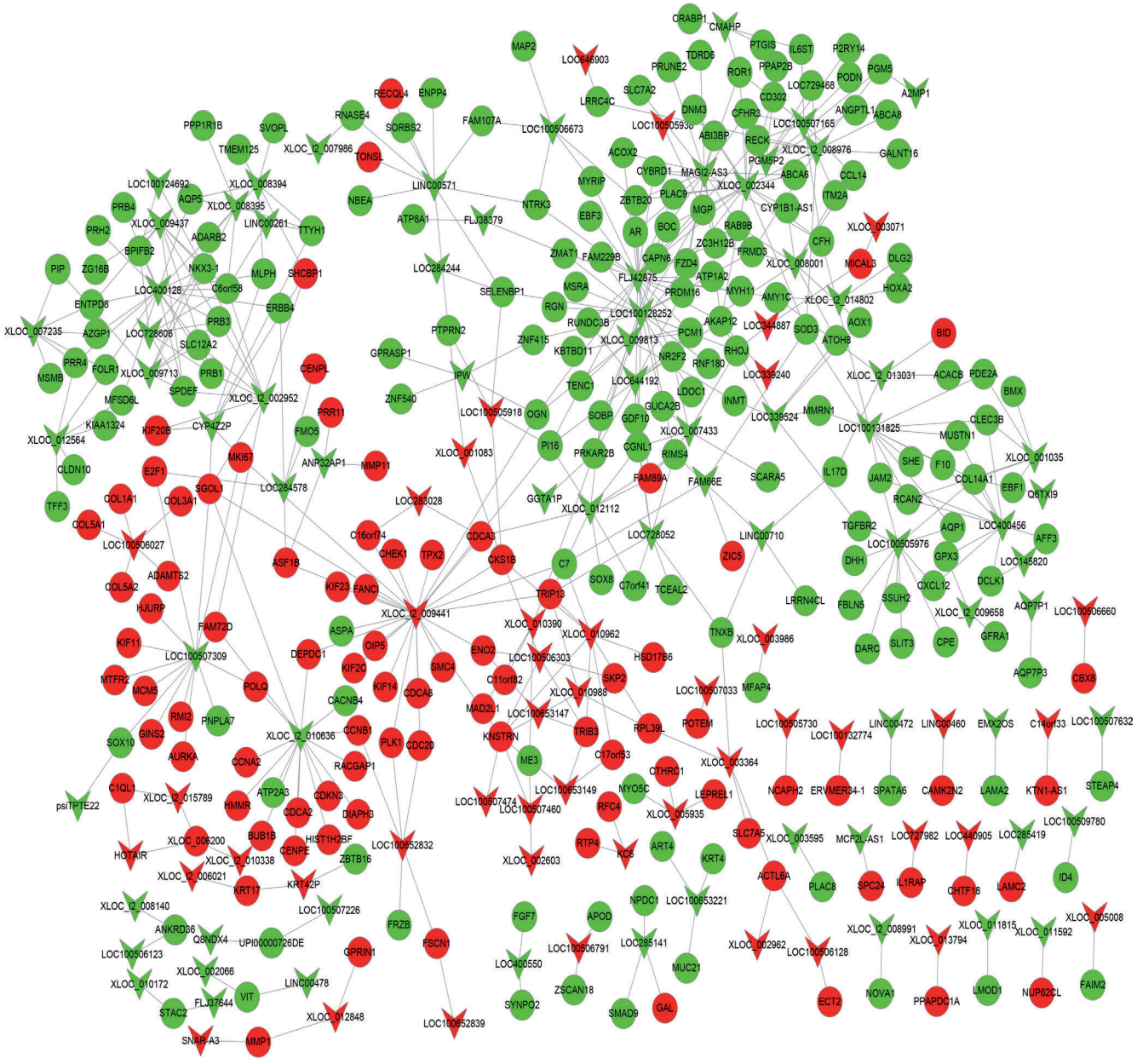

Figure 3. Co-expression network of differentially expressed genes and lncRNAs. Rounded nodes represent genes, and v-shaped nodes represent lncRNAs. Red nodes represent the up-regulated ones, and green nodes represent down-regulated ones.

1081 regulatory relationships in the regulatory network being composed of DE-miRNAs and DE-lncRNAs (Figure 5; Supplementary file). For instance, downregulated hsa-miR-4721 had the highest degree (degree = 49), and interacted with a series of up-regulated lncRNAs (e.g. XLOC_l2_009441 and XLOC_010962); upregulated hsa-miR-424-5p (degree = 38) interacted with some down-regulated lncRNAs (e.g. LOC100505976 and XLOC_l2_010636).

Correlation analysis for DEGs, DE-miRNAs and DE-lncRNAs. In total, 30 DEGs, 21 DE-miRNAs and 19 DE-lncRNAs formed the integrated regulatory network (Figure 6; Supplementary file). Upregulated hsa-miR-424-5p had the highest degree (degree = 19) and regulated several down-regulated DEGs (e.g. *SLC12A2* and *SLC7A2*) and DE-lncRNAs (e.g. MAGI2-AS3).

Validation of expression levels of DEGs, DE-miRNAs and DE-lncRNAs. The expression levels of 7 DEGs (*ATP1A2*, *TGFBR2*, *BUB1B*, *CCNA2*, *CCNB1*, *CDKN3* and *CENPE*), 2 DE-miRNAs (hsa-miR-106b-5p and hsa-miR-424-5p) and 2 DE-lncRNAs (LOC100505976 and XLOC_l2_010636) were

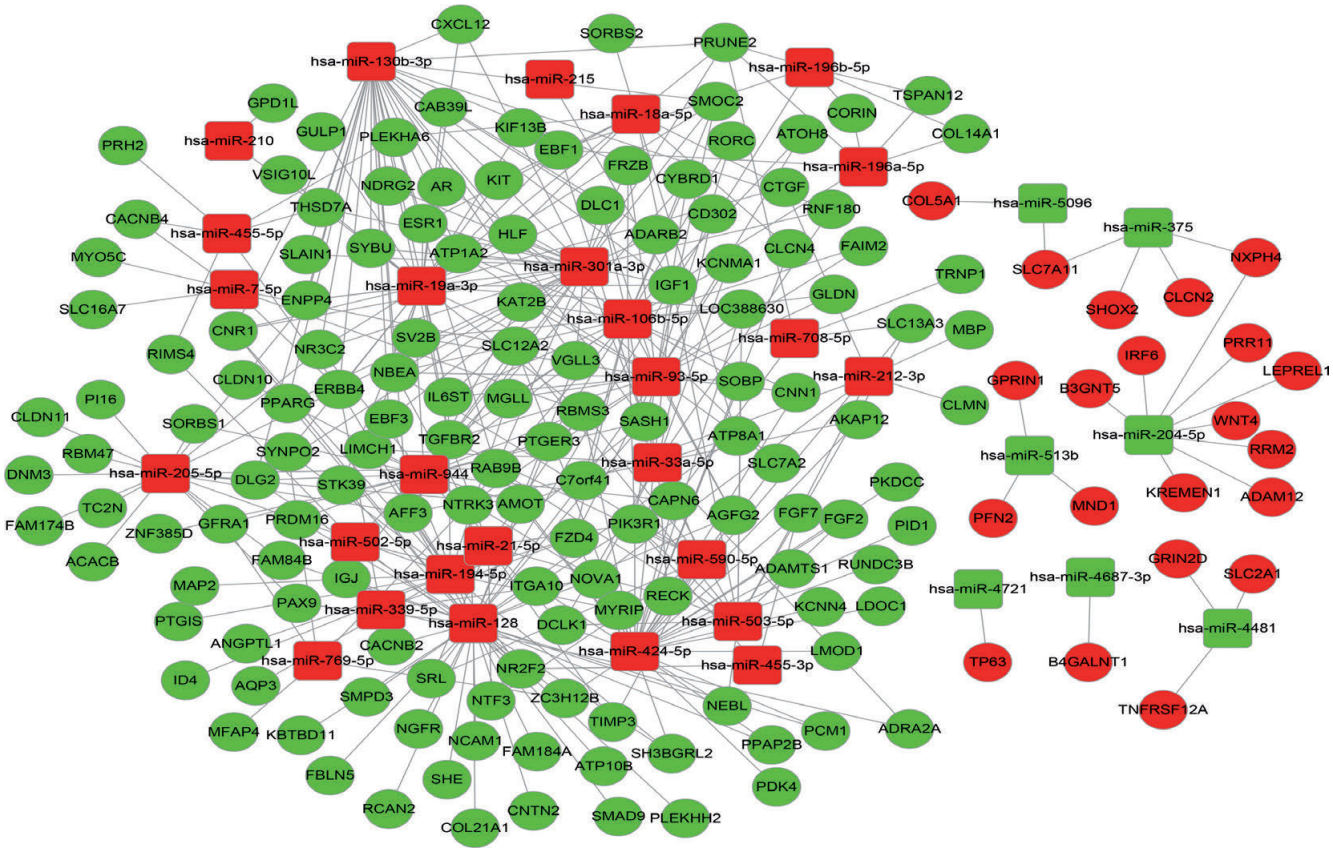

Figure 4. The regulatory network of differentially expressed genes and miRNAs. Rounded nodes represent genes, and quadrate nodes represent miRNAs. Red nodes represent the up-regulated ones, and green nodes represent down-regulated ones.

confirmed by qRT-PCR. According to the results, compared with the ANM, the 2 DE-lncRNAs and the 2 DEGs (*ATP1A2* and *TGFBR2*) were all significantly downregulated in LSCC ($P < 0.05$); the 5 DEGs (*BUB1B*, *CCNA2*, *CCNB1*, *CDKN3* and *CENPE*) and the 2 DE-miRNAs were significantly upregulated ($P < 0.05$) (Figure S1A-K), which were consistent with the results obtained from the above bioinformatics analysis.

Discussion

In the present study, a total of 826 DEGs (352 up-regulated ones and 474 down-regulated ones), 347 DE-lncRNAs (181 up-regulated ones and 166 down-regulated ones) and 44 DE-miRNAs (34 up-regulated ones and 10 down-regulated ones) were identified from LSCC samples. The expression levels of 7 DEGs (*ATP1A2*, *TGFBR2*, *BUB1B*, *CCNA2*, *CCNB1*, *CDKN3* and *CENPE*), 2 DE-miRNAs (hsa-miR-106b-5p and hsa-miR-424-5p) and 2 DE-lncRNAs (LOC100505976 and XLOC_l2_010636) were confirmed by qRT-PCR.

According to the co-expression network analysis for DEGs and DE-lncRNAs, DE-lncRNA FLJ42875 had a highest degree in the network (degree = 26). FLJ42875 was found to be co-expressed with a series of down-regulated DEGs, such as *ATP1A2*. *ATP1A2* encodes a member of Na+/K+-ATPases family, which is an integral membrane protein in charge of establishing and maintaining the electrochemical gradients of Na and K ions across the plasma membrane [31]. The targeting of alpha-1 or alpha-3 subunit of Na+/K+-ATPases is a crucial prediction in the clinical treatment of tumors [32]. There is no evidence that FLJ42875 is correlated with LSCC so far. However, a previous study has shown that FLJ42875 is significantly down-regulated in gastrointestinal stromal tumor tissues compared with non-tumor tissues [33], suggesting FLJ42875 may be also implicated in LSCC. Therefore, the co-expression of FLJ42875 and *ATP1A2* may exert important roles during the progression of LSCC.

In the co-expression network, LOC100505976 was co-expressed with a set of DEGs, such as *AQP1*, *CXCL12* and *TGFBR2*. Among them, *AQP1* and *CXCL12* were significantly enriched in extracellular region. There is evidence that the mRNA and protein expression of AQP1 (aquaporin 1) in LSCC tissues is remarkably stronger than that in adjacent normal tissues [34, 35], and *AQP1* is potentially an important prognostic factor in LSCC [36]. *CXCL12* encodes chemokine (C-X-C motif) ligand 12, and it has been validated to be markedly expressed in laryngeal and hypopharyngeal squamous

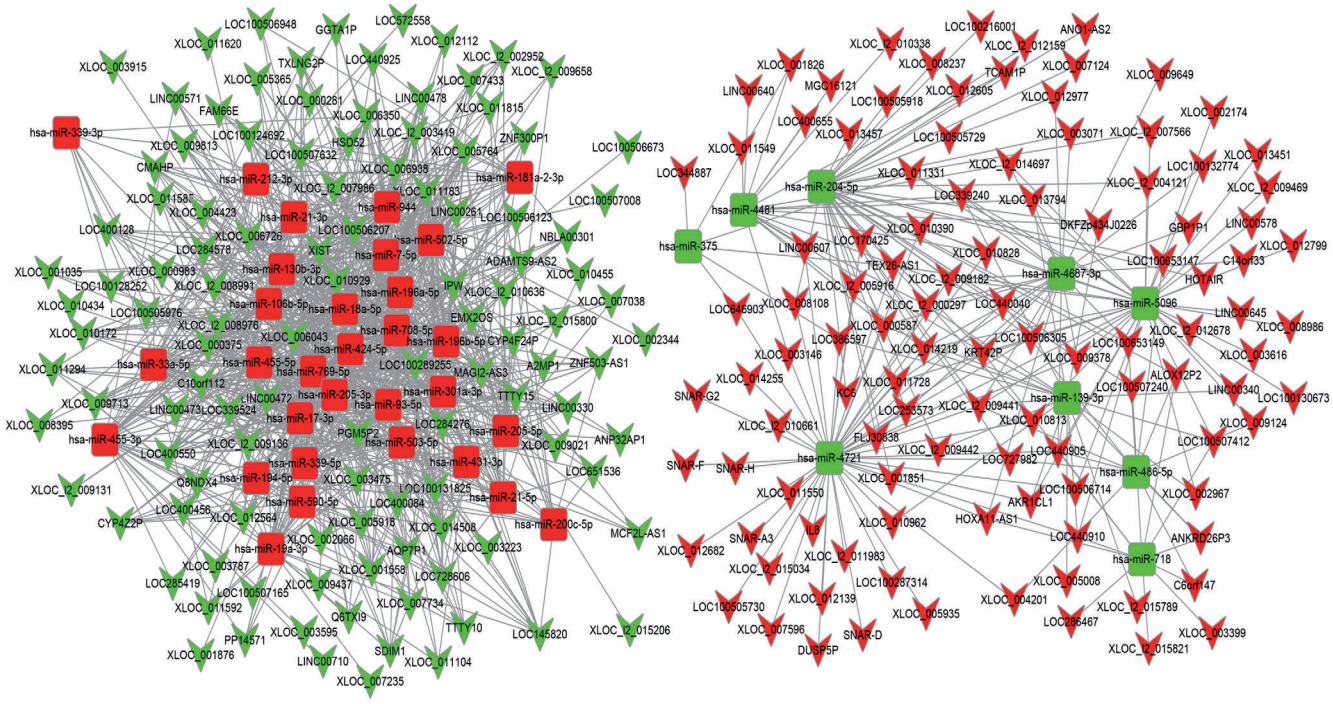

Figure 5. The regulatory network of differentially expressed miRNAs and lncRNAs. Quadrate nodes represent miRNAs, and v-shaped nodes represent lncRNAs. Red nodes represent the up-regulated ones, and green nodes represent down-regulated ones.

cell carcinomas tumor, and it can promote tumor metastasis via enhancing the extracellular signal-regulated kinase (ERK) pathway activity [37]. Furthermore, a previous study has reported that the *CXCL12*/*CXCR4* system plays a pivotal role in the development and prognosis of head and neck squamous cell carcinoma (HNSCC) [38]. In the present study, *TGFBR2*, which encodes transforming growth factor, beta receptor II, was found to be distinctly enriched in glycosaminoglycan binding. Glycosaminoglycans (GAGs) have significant functions in tumor metastasis [39]. The loss of *TGFBR2*/*SMAD4* can induce abnormal proliferation and decrease apoptosis of HNSCC [40]. Furthermore, *TGFBR2* was regulated by several DE-miRNAs, such as hsa-miR-106b-5p, which was found aberrantly expressed in LSCC [41]. Currently, there are no any other studies reporting LOC100505976 so far, whereas it was discovered to interact with hsa-miR-424-5p in this study. MiR-424-5p has been previously reported to increase proliferation, migration and invasion of pancreatic cancer [42], and it is deregulated in multiple cancers, such as colorectal cancer [43], non-small cell lung cancer [44] and cervical cancer [45]. Therefore, miR-424-5p was likely to be momentous in the progression of LSCC. Additionally, in this study, according to the results of qRT-PCR, the expression levels of LOC100505976 and *TGFBR2* were validated to be downregulated in the LSCC samples, compared with the ANM samples; and hsa-miR-424 -5p and hsa-miR-106b-5p were confirmed to be upregulated in LSCC, which are consistent with the results from the bioin-

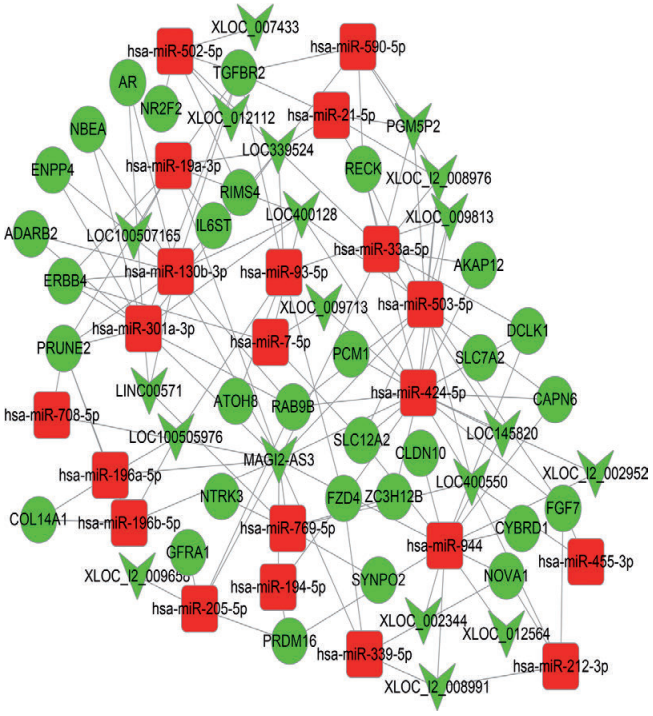

Figure 6. The integrated network formed by differentially expressed genes, miRNAs and lncRNAs. Rounded nodes represent genes; quadrate nodes represent miRNAs; and v-shaped nodes represent lncRNAs. Red nodes represent the up-regulated ones, and green nodes represent down-regulated ones.

formatics analysis. Taken together, LOC100505976, along with the DEGs of *AQP1*, *CXCL12* and *TGFBR2*, and the miRNAs of hsa-miR-424-5p and hsa-miR-106b-5p might play crucial roles in the development of LSCC.

In the network consisting of DEGs and DE-lncRNAs, the downregulated XLOC_l2_010636 that also interacted with hsa-miR-424-5p, which modulated a set of DEGs related to mitotic cell cycle, including *BUB1B*, *CCNA2*, *CCNB1*, *CDKN3* and *CENPE*. All of these genes were validated to be upregulated by qRT-PCR in this study, and they have been reported to be expressed abnormally in head and neck cancer [46-49]. As above-mentioned, hsa-miR-424-5p might be a key player in LSCC. Furthermore, deregulated cell cycle results in aberrant proliferation, which is a characteristic of tumors. Thereby, XLOC_l2_010636 and the genes involved in cell cycle (e.g. *BUB1B*, *CCNA2* and *CCNB1*) might play key roles in the tumorigenesis of LSCC.

Except for the relationships with DE-lncRNAs, hsa-miR-424-5p also targeted a series of DEGs, such as *FGF2*, *FGF7*, *IGF1* and *PIK3R1*. Both *FGF2* and *FGF7* encode basic fibroblast growth factors (bFGFs) which possess broad angiogenic and mitogenic activities [50]. In this study, they were predicted to be associated with glycosaminoglycan binding. A previous study has reported that bFGFs are glycosaminoglycan-binding cytokines and function as potential clinical tumor markers [51]. Despite this, it has been reported that *FGF2* plays a functional role in HNSCC angiogenesis [52]. Furthermore, insulin-like growth factor 1 receptor (IGF1R)-alpha protein overexpression is demonstrated to be closely correlated with relapse and survival in operable squamous-cell laryngeal cancer [53]. Additionally, the PI3K (phosphoinositide-3-kinase) pathway has been previously reported to play a pivotal role in the initiation, invasion, and metastasis of HNSCC [54]. Therefore, hsa-miR-424-5p and its targets, including *FGF2*, *FGF7*, *IGF1* and *PIK3R1*, might play functional roles during the occurrence and development of LSCC.

Despite the aforementioned results, this study has some limitations. In this study, the number of samples analyzed was small. A meta-analysis integrating more datasets may generate more persuasive results. In our future study, we will integrate larger samples to obtain more significant results and conduct experiments to confirm them, especially the relationships among the DEGs, DE-miRNAs and DE-lncRNAs.

Conclusion

In conclusion, hsa-miR-424-5p had interactions with LOC100505976 and XLOC_l2_010636, and targeted several genes (e.g. *FGF2*, *FGF7*, *IGF1* and *PIK3R1*). These pairs along with others, such as FLJ42875 and its targets (e.g. *ATP1A2*), LOC100505976 and its targets (e.g. *AQP1*, *CXCL12* and *TGFBR2*), XLOC_l2_010636 and its targets (e.g. *BUB1B* and *CCNA2*), hsa-miR-424-5p and its targets (e.g. *FGF2*, *FGF7*, *IGF1* and *PIK3R1*), as well as hsa-miR-106b-5p and its targets (e.g. *TGFBR2*), might play significant roles in the pathogenesis of LSCC. These findings were expected to provide new information for further laboratorial studies and researches on the regulatory mechanisms among mRNAs, miRNAs and lncRNAs in LSCC.

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Supplementary information is available in the online version of the paper.

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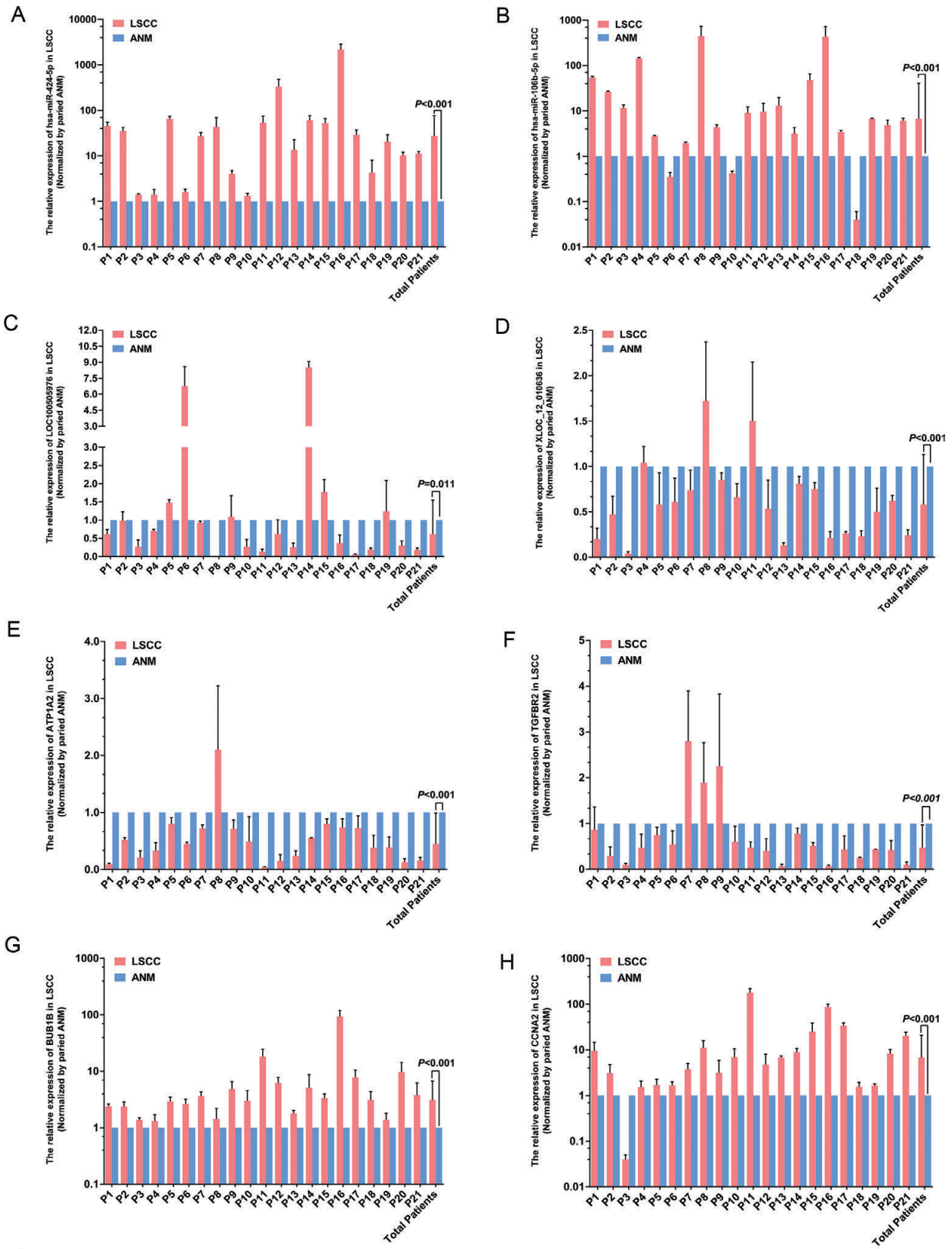
A
The relative expression of hsa-miR-424-5p in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
B
The relative expression of hsa-miR-106b-5p in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
C
The relative expression of LOC100505976 in LSCC (Normalized by paried ANM)
LSCC
ANM
P=0.011
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
D
The relative expression of XLOC_12_010636 in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
E
The relative expression of ATP1A2 in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
F
The relative expression of TGFBR2 in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
G
The relative expression of BUB1B in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients
H
The relative expression of CCNA2 in LSCC (Normalized by paried ANM)
LSCC
ANM
P<0.001
P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17 P18 P19 P20 P21 Total Patients

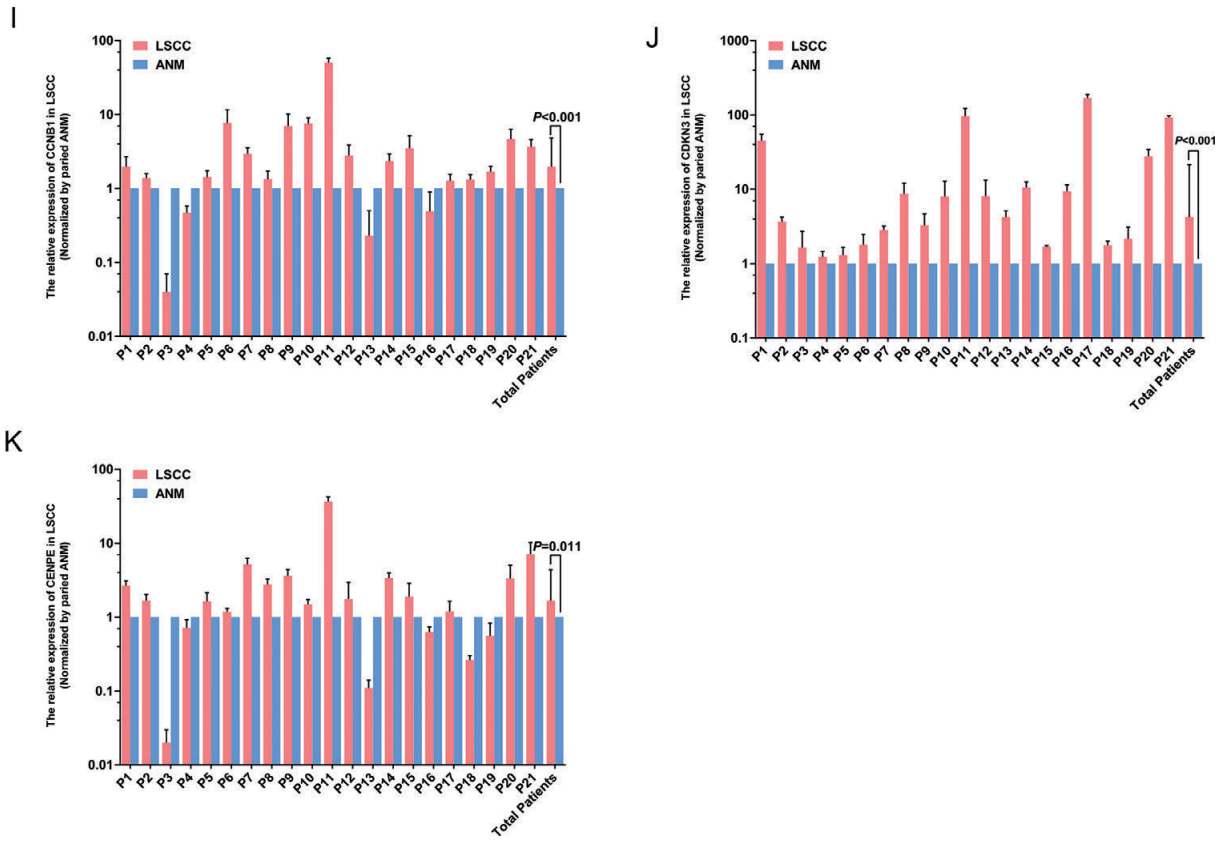

Figure S1 The expression levels of differentially expressed genes, miRNAs and lncRNAs determined by quantitative real time polymerase chain reaction. (A) hsa-miR-424-5p; (B) hsa-miR-106b-5p; (C) LOC100505976; (D) XLOC_l2_010636; (E) *ATP1A2*; (F) *TGFBR2*; (G) *BUB1B*; (H) *CCNA2*; (I) *CCNB1*; (J) *CDKN3*; (K) *CENPE*. LSCC, laryngeal squamous cell carcinoma; ANM, adjacent normal mucosa. P1-21 indicate the patient samples.

Table S1. Summary of patient population and clinicopathological variables

Clinicopathological features	Case No.
Median age	
≤61 years	12
＞61 years	9
Gender	
Female	1
Male	20
Primary sites	
Glottic	6
Supraglottic	12
Subglottic	3
Histologic grade	
Well	5
Moderate	10
Poor	6
Primary Tumor	
T1	4
T2	8
T3	7
T4	2
Lymph Node	
N0	17
N+	4
Distant Metastasis	
M0	21
M1	0
Clinical Stage	
I	4
II	6
III	6
IV	5

Table S2. Primer sequences of genes and miRNAs for quantitative real time polymerase chain reaction

Name		**Primer sequence (5'-3)'**
LOC100505976	Forward	CCATTTTTTTCCAGACAGAAGT
	Reverse	TCGCAGCTACCTGAGTCAGA
XLOC_l2_010636	Forward	CTGTGGAATTCAGGCCATACA
	Reverse	AGCACTTTCACATAGCACTCTC
ATP1A2	Forward	TCTATCCACGAGCGAGAAGAC
	Reverse	CCATGTAGGCATTTTGAAAGGC
TGFBR2	Forward	GCTTTGCTGAGGTCTATAAGGC
	Reverse	GGTACTCCTGTAGGTTGCCCT
BUB1B	Forward	AAATGACCCTCTGGATGTTTGG
	Reverse	GCATAAACGCCCTAATTTAAGCC
CCNA2	Forward	GGATGGTAGTTTTGAGTCACCAC
	Reverse	CACGAGGATAGCTCTCATACTGT
CCNB1	Forward	AATAAGGCGAAGATCAACATGGC
	Reverse	TTTGTTACCAATGTCCCCAAGAG
CDKN3	Forward	GGACTCCTGACATAGCCAGC
	Reverse	AGGAGACAAGCAGCTACAAGAC
CENPE	Forward	AAAGCCTGCAAGAAACCAAAGC
	Reverse	TCTGTCGGTCCTGCTTTTTCTG
GAPDH	Forward	GCTCTCTGCTCCTCCTGTTC
	Reverse	ACGACCAAATCCGTTGACTC
U6	Forward	TCGCTTCGGCAGCACATAT
	Reverse	ATTTGCGTGTCATCCTTGC
hsa-miR-106b-5p-F	Forward	GGTAAAGTGCTGACAGTGCAGAT
hsa-miR-424-5p-F	Forward	CAGCAGCAATTCATGTTTTGAA
miR-Universal	Reverse	GAGCACCAGTTACGCATGCCGAGGTCGACTT CCTAGA

Probe Name	Gene Symbol	logFC	Adjusted.p.value	Style
agiseq22683	MMP11	4,9410492	0,00013812	up
agiseq22314	ASPA	-3,5566721	0,000273449	down
agiseq50392	PI16	-5,6932454	0,000273449	down
agiseq25541	VIT	-4,3313794	0,000273449	down
agiseq12510	OGN	-5,2260941	0,000273449	down
agiseq47454	OGN	-4,4212345	0,000273449	down
agiseq7791	FAM107A	-4,1079921	0,000273449	down
agiseq230	MMP1	5,3846973	0,000273449	up
agiseq25122	FAM3D	-4,8239911	0,000273449	down
agiseq47433	CXCL17	-3,4201017	0,000273449	down
agiseq15363	GDF10	-4,5646345	0,000397137	down
agiseq50562	MYRIP	-4,1271166	0,000413109	down
agiseq11812	HSD17B6	3,5355184	0,000413109	up
agiseq45062	KREMEN2	3,9108517	0,000413109	up
agiseq6434	GALNT16	-3,4948405	0,000421067	down
agiseq16597	ATP1A2	-4,2867183	0,000421067	down
agiseq48436	ANGPTL1	-4,0067413	0,000421067	down
agiseq17806	SOST	4,5351926	0,000446712	up
agiseq1182	CYP4B1	-4,0269486	0,000446712	down
agiseq44964	LAMC2	3,6630827	0,000468666	up
agiseq17099	ABCA8	-3,3763304	0,000470905	down
agiseq34206	TNXB	-4,0572228	0,000684834	down
agiseq29088	LAMC2	3,5871982	0,0006916	up
agiseq14607	C7	-2,8466236	0,000712824	down
agiseq535	LOC728052	-4,2770447	0,000741933	down
agiseq27155	COL10A1	3,8523933	0,000741933	up
agiseq15694	PTGDS	-2,8104808	0,000829465	down
agiseq47088	TNXB	-3,576453	0,000899554	down
agiseq25730	ZIC5	2,4762237	0,000899554	up
agiseq37683	PGM5	-2,7508561	0,000899554	down
agiseq5607	LOC729468	-2,6214504	0,000899554	down
agiseq26499	APOD	-4,1052072	0,000899554	down
agiseq49731	ATP6V0A4	-2,6508015	0,000899554	down
agiseq20445	TNXB	-2,9234832	0,000923842	down
agiseq44378	CLEC3B	-2,9004962	0,000923842	down
agiseq10108	SELENBP1	-3,082209	0,000923842	down
agiseq34882	XLOC_003364	2,9888777	0,000923842	up
agiseq819	LOC339524	-2,9118095	0,000923842	down
agiseq17021	SERPINB11	-3,5677152	0,000923842	down
agiseq1674	NXPH4	4,0004551	0,000929567	up
agiseq6177	NOVA1	-2,9373442	0,000929567	down
agiseq12339	CCL14	-4,0861492	0,001093934	down
agiseq40258	IL24	3,7297856	0,001131709	up
agiseq16823	LAMA3	2,44506	0,001197412	up
agiseq23797	ITLN1	-4,1971787	0,001220354	down
agiseq15416	TNXB	-2,806163	0,00122668	down
agiseq7960	XLOC_l2_008976	-2,700732	0,00122668	down
agiseq40019	MGP	-3,2392235	0,00122668	down
agiseq47658	NBEA	-2,9313741	0,00122668	down
agiseq4226	TFF3	-2,9866489	0,001254331	down

agiseq16480	TFF3	-5,2285792	0,001366949	down
agiseq27089	SOD3	-2,6237668	0,001367907	down
agiseq16670	MGP	-3,1946559	0,001426711	down
agiseq44703	NOSTRIN	-2,5371772	0,001450505	down
agiseq4939	PTPRN2	-2,7533791	0,001450505	down
agiseq35983	VIT	-2,5887859	0,0015191	down
agiseq23546	ERVMER34-1	3,2041568	0,0015191	up
agiseq49563	ZG16B	-5,251274	0,0015191	down
agiseq29979	XLOC_002603	4,1786969	0,001535848	up
agiseq1326	SNAR-A3	3,2876602	0,001563485	up
agiseq28284	AUNIP	2,6935656	0,001570369	up
agiseq24348	RORC	-3,4251417	0,001640493	down
agiseq43813	NR3C2	-3,0849103	0,001662823	down
agiseq48200	CNTN2	-2,5098908	0,001694477	down
agiseq7875	CAB39L	-2,5368119	0,001694477	down
agiseq33217	ERVMER34-1	2,9971012	0,001694477	up
agiseq14579	MMRN1	-3,5378601	0,001694477	down
agiseq13275	KIT	-2,3189868	0,001694477	down
agiseq773	BCAS1	-3,0978908	0,001694477	down
agiseq1187	DARC	-2,1635032	0,001764718	down
agiseq50373	LOC100505730	2,3541582	0,001764718	up
agiseq13644	IL33	-3,3254788	0,001764718	down
agiseq20103	HLF	-2,8771583	0,001782672	down
agiseq35553	XLOC_l2_010751	3,1613477	0,001791459	up
agiseq16582	FAIM2	-2,2216452	0,001854598	down
agiseq24772	GFRA1	-2,6689441	0,001854598	down
agiseq40890	ERVMER34-1	2,5634698	0,001854598	up
agiseq1097	SPP1	3,9625009	0,001854598	up
agiseq10587	APLN	2,4622199	0,001854598	up
agiseq26224	PTHLH	3,8584743	0,001854598	up
agiseq14242	GNA14	-2,2139122	0,001854598	down
agiseq21000	SLIT3	-2,7015805	0,001854598	down
agiseq1923	PGM5	-2,2384006	0,001854598	down
agiseq40235	C16orf89	-2,7616946	0,001854598	down
agiseq1085	PLAU	2,24969	0,001854598	up
agiseq3007	CXCL12	-3,1635585	0,001854598	down
agiseq33364	TFF3	-4,828103	0,001854598	down
agiseq27317	SLC6A10P	2,3260534	0,001854598	up
agiseq10536	WISP2	-3,4469024	0,001854598	down
agiseq42762	HBA2	-2,9644832	0,001854598	down
agiseq19624	CEACAM1	-2,2757062	0,001854598	down
agiseq38782	AGFG2	-2,3315568	0,001880739	down
agiseq5020	ECE2	2,0576398	0,001968686	up
agiseq45787	TRIP13	2,5880436	0,001968686	up
agiseq17362	PLAU	2,2138379	0,001968686	up
agiseq39149	PLEKHA6	-2,5598513	0,001968686	down
agiseq11038	CAPN6	-3,2672043	0,001968686	down
agiseq25699	TESC	-2,7475499	0,001977764	down
agiseq38961	PRSS21	2,0695436	0,001977764	up
agiseq5332	LOC100653149	3,2502226	0,001989337	up
agiseq26024	ADRA2A	-2,9898633	0,001989337	down

agiseq4230	RTP4	2,171059	0,002000335	up
agiseq24686	AQP1	-2,236413	0,002000335	down
agiseq1363	SNAR-B2	3,0745155	0,002000335	up
agiseq34461	PLAC9	-2,6708991	0,002000335	down
agiseq21488	IL17D	-2,4056935	0,002000335	down
agiseq15552	COL1A1	3,1697	0,002000335	up
agiseq3043	IRX4	2,7829078	0,002000335	up
agiseq3843	SNAR-D	3,2698683	0,002036825	up
agiseq27140	SNORD116-4	-1,9865292	0,002036825	down
agiseq35538	ABI3BP	-2,9329734	0,002036825	down
agiseq6382	IGFBP3	2,5920048	0,002036825	up
agiseq37922	XLOC_l2_006021	2,835614	0,002044166	up
agiseq3541	KIT	-2,335287	0,002044166	down
agiseq21389	KRT42P	2,8256543	0,002044166	up
agiseq3635	SCIN	-2,8398915	0,002044166	down
agiseq17422	LRRN4CL	-2,4976268	0,002048502	down
agiseq37381	COL14A1	-2,6032536	0,002048502	down
agiseq35838	HBA2	-2,9118397	0,002049544	down
agiseq14818	PTGER3	-2,5596222	0,002069934	down
agiseq48600	GPRIN1	2,9618016	0,002129239	up
agiseq3861	PKMYT1	2,6781275	0,002129239	up
agiseq36207	SNORD116-6	-1,9307076	0,002129239	down
agiseq32515	CLDN11	-2,7253612	0,002129239	down
agiseq36530	PODN	-2,088193	0,002129239	down
agiseq13093	E2F1	2,5990002	0,002133971	up
agiseq13064	MCM2	2,4160799	0,002133971	up
agiseq22958	TRIP13	2,6421845	0,002133971	up
agiseq14079	TC2N	-2,0882161	0,002133971	down
agiseq23004	STEAP4	-2,4074461	0,002133971	down
agiseq34528	HBD	-3,1885109	0,002133971	down
agiseq20251	TK1	2,5791451	0,002169162	up
agiseq3728	SERPINE1	2,3345	0,002172049	up
agiseq6105	MTFR2	2,4925846	0,00217632	up
agiseq50679	ME3	-2,0652193	0,00217632	down
agiseq8561	SBSPON	-3,2692644	0,00217632	down
agiseq4619	CTHRC1	2,398329	0,00217632	up
agiseq38989	SLC6A8	2,227666	0,00217632	up
agiseq35272	PRR4	-7,2548883	0,00217632	down
agiseq6763	ADH4	-3,4400278	0,00219716	down
agiseq42076	GPX3	-2,4240375	0,002198893	down
agiseq22549	CDC45	2,817044	0,002280106	up
agiseq28392	LOC100506303	2,9604041	0,00229493	up
agiseq43176	LDLRAD2	-2,6548228	0,00229493	down
agiseq39126	NDRG2	-2,3187771	0,00229493	down
agiseq19024	POSTN	2,384747	0,00229493	up
agiseq9811	IGF1	-2,3064276	0,00229493	down
agiseq42366	AMY1C	-2,5835887	0,002317884	down
agiseq47455	SNAR-H	3,387677	0,002323358	up
agiseq44533	CBX2	3,3516729	0,002323358	up
agiseq20065	CCL19	-3,2732728	0,002323358	down
agiseq47952	SH3BGRL2	-3,6007682	0,002337587	down

agiseq32706	FAM174B	-2,1781473	0,002337587	down
agiseq26730	LIMCH1	-2,6242415	0,002337587	down
agiseq43900	CEACAM1	-2,5929742	0,002337587	down
agiseq45517	CCL19	-3,2267221	0,002337587	down
agiseq1806	GRIN2D	2,4413707	0,002341101	up
agiseq15587	HBA2	-2,8524028	0,002373057	down
agiseq5282	LOXL2	2,1884663	0,002414601	up
agiseq37581	C6orf58	-7,4791657	0,002421709	down
agiseq9218	CILP	-3,5441195	0,002449912	down
agiseq45582	LRRC4C	-2,5285204	0,002449912	down
agiseq13455	MYH11	-2,9205263	0,002449912	down
agiseq27924	RNASE4	-2,817504	0,002449912	down
agiseq39365	ABI3BP	-2,9630211	0,002449912	down
agiseq38183	ABCA6	-2,4873254	0,002490762	down
agiseq39195	CXCL9	3,7746425	0,00250318	up
agiseq7116	MLPH	-3,0579815	0,00250318	down
agiseq9716	INMT	-2,2978048	0,002552822	down
agiseq37302	PRKAR2B	-2,1572932	0,002572757	down
agiseq8622	DCLK1	-2,7071084	0,002572757	down
agiseq19959	PLA2G2A	-3,8682177	0,002572757	down
agiseq37348	AOX1	-2,3996541	0,002572757	down
agiseq3003	SNAR-G2	3,3087998	0,002581835	up
agiseq42363	RPL39L	2,2763456	0,002584257	up
agiseq15857	CRABP1	-2,9850133	0,002584257	down
agiseq28566	PDK4	-2,424531	0,002584257	down
agiseq31609	CXCL5	2,7553938	0,002624962	up
agiseq27717	TCEAL2	-2,9607675	0,002665244	down
agiseq20686	PCP4L1	-2,3728761	0,002694353	down
agiseq35836	CENPL	1,8880115	0,002695406	up
agiseq9376	GPD1L	-1,7757698	0,002695406	down
agiseq6372	CYP1B1	-2,6531585	0,00270264	down
agiseq9664	SALL4	2,334225	0,002710773	up
agiseq29104	MFSD6L	-2,385513	0,002710773	down
agiseq37543	SLC7A5	2,1170879	0,00271422	up
agiseq47947	NUP62CL	1,7669673	0,00271422	up
agiseq34363	NTRK3	-3,4437681	0,00271422	down
agiseq4416	TP63	2,5463077	0,00271422	up
agiseq1533	CFHR3	-2,45866	0,00271422	down
agiseq12354	NTRK3	-2,3394397	0,002722167	down
agiseq10801	C16orf59	2,6465239	0,002722167	up
agiseq9498	AKAP12	-1,9845055	0,002722167	down
agiseq44073	RAG1	2,3434059	0,002722167	up
agiseq30362	PLEKHB1	-3,4635358	0,002722167	down
agiseq42164	PRR4	-6,2941522	0,002722167	down
agiseq46476	ECT2	2,1246479	0,002763397	up
agiseq4581	AMY1C	-2,4638252	0,002777613	down
agiseq45883	LOC285419	-1,9767984	0,00277886	down
agiseq26812	LOC285419	-2,0711546	0,002820169	down
agiseq22664	MFAP4	-2,3151819	0,002840898	down
agiseq12822	GPX3	-2,5568483	0,002840898	down
agiseq21936	PRR11	1,8434044	0,002880528	up

agiseq46326	PLEK2	2,4345857	0,002880528	up
agiseq15676	HSPB3	3,6283012	0,002880528	up
agiseq36619	CXCL10	3,6518755	0,002880528	up
agiseq42453	PRH2	-7,1924108	0,002880528	down
agiseq15668	CMTM5	-2,2081972	0,002888683	down
agiseq5489	RUNDC3B	-2,0498015	0,002989588	down
agiseq675	KIF14	2,6701703	0,002989588	up
agiseq25896	BOC	-2,0334804	0,002989588	down
agiseq37290	PRKAR2B	-2,1644848	0,002989588	down
agiseq3027	IQGAP3	2,4521949	0,002989588	up
agiseq23260	COL14A1	-1,9843529	0,002989588	down
agiseq27606	HOXC6	2,904091	0,002989588	up
agiseq37068	FAM184A	-2,3438915	0,002989588	down
agiseq37268	CAPN5	-1,9955635	0,002989588	down
agiseq20890	DCLK1	-2,116481	0,002989588	down
agiseq28790	STEAP4	-3,0122684	0,002989588	down
agiseq34829	RECK	-1,8699683	0,002991416	down
agiseq19965	CTTNBP2	-2,0983325	0,002991416	down
agiseq24907	FAM150B	-3,7775449	0,003027052	down
agiseq30606	C16orf74	1,9292032	0,003028308	up
agiseq2718	FOXM1	2,9613818	0,003028308	up
agiseq13822	IFIT3	2,2500577	0,003028308	up
agiseq10328	AKAP12	-2,1272915	0,003040965	down
agiseq47080	FMO2	-3,4232257	0,003040965	down
agiseq46277	CD302	-1,9038814	0,003040965	down
agiseq12238	CXCL10	3,5783052	0,003040965	up
agiseq34936	CACNB4	-2,4986148	0,003040965	down
agiseq8225	HBB	-3,0875775	0,00305253	down
agiseq16648	CGNL1	-2,9208082	0,003099278	down
agiseq40329	SERPINB11	-2,8757132	0,003130677	down
agiseq34356	FAM180B	-2,012763	0,003166574	down
agiseq2220	OIP5	2,652483	0,003166574	up
agiseq46088	FLJ42875	-2,4586127	0,003166574	down
agiseq50568	KIF23	2,37759	0,003166574	up
agiseq13544	SORBS1	-1,6946799	0,003166574	down
agiseq5162	AOX1	-2,3022229	0,003166574	down
agiseq40883	PRH2	-6,4515992	0,003166574	down
agiseq43370	PPP1R1B	-3,8147679	0,003166574	down
agiseq47636	MUC21	-4,8759521	0,003166574	down
agiseq39596	BCAS1	-2,5353838	0,003166574	down
agiseq43619	CRYM	-2,6298267	0,003167533	down
agiseq6599	ATOH8	-2,2811474	0,003170572	down
agiseq17522	FAM150B	-3,9109865	0,003198892	down
agiseq49144	CRABP1	-1,727154	0,003198892	down
agiseq17267	COL5A2	2,0038383	0,003224745	up
agiseq23074	MBP	-2,8506169	0,003230175	down
agiseq34741	SMAD9	-2,5890017	0,003230175	down
agiseq39164	CXCL11	3,1976256	0,003230175	up
agiseq3662	ZWINT	2,2131877	0,003243532	up
agiseq45985	AKAP12	-2,260927	0,003269011	down
agiseq5019	IL6ST	-1,8279111	0,003269011	down

agiseq42067	SCARA5	-3,7538915	0,003279707	down
agiseq25188	SNORD107	-1,7679931	0,003279707	down
agiseq43306	SNAR-F	3,5176068	0,003279707	up
agiseq14491	ZMAT1	-2,2595467	0,003279707	down
agiseq7181	MYH11	-2,6621431	0,003279707	down
agiseq26137	SNAR-G1	3,4814879	0,003279707	up
agiseq29906	CPE	-1,9783488	0,003279707	down
agiseq35517	CH25H	-1,9680472	0,003279707	down
agiseq47229	GULP1	-2,097024	0,003279707	down
agiseq10522	SORBS2	-2,7287954	0,003279707	down
agiseq41604	CDCA5	2,6041201	0,003279707	up
agiseq29603	CFH	-2,267394	0,003279707	down
agiseq37537	CFH	-2,3579938	0,003279707	down
agiseq38810	NCAM1	-2,2306584	0,003279707	down
agiseq34954	RBP1	2,0281451	0,003279707	up
agiseq35432	LIMCH1	-2,1151304	0,003279707	down
agiseq4185	ADAM12	2,1948707	0,003279707	up
agiseq43141	IGF1	-2,1426301	0,003279707	down
agiseq27495	KRT4	-4,4153534	0,003279707	down
agiseq4277	FCGBP	-2,8358803	0,003279707	down
agiseq8889	LOC100131825	-2,0132012	0,003308961	down
agiseq33496	MSANTD3-TMEFF1	1,7581881	0,003330537	up
agiseq23151	ID4	-1,8878495	0,003340664	down
agiseq49505	TONSL	2,1040535	0,003362798	up
agiseq37686	PPAP2B	-1,6984765	0,003362798	down
agiseq18925	LEPREL1	2,7134413	0,003362798	up
agiseq7504	IGF2BP2	2,2174004	0,003362798	up
agiseq19480	GJB7	1,7544284	0,003362798	up
agiseq15943	CYP1B1	-2,4802576	0,003362798	down
agiseq28367	CD200R1	-1,8839736	0,003381212	down
agiseq15407	XLOC_011728	2,0939445	0,003384641	up
agiseq18607	CLCA4	-4,3588123	0,003384641	down
agiseq46677	RAD51	2,2179449	0,003404428	up
agiseq32175	SNORD116-19	-1,684677	0,003408886	down
agiseq11940	LGI4	-1,9201422	0,003410632	down
agiseq6077	PRB4	-6,8821505	0,003410632	down
agiseq33322	TROAP	2,0595458	0,003413837	up
agiseq37675	ENTPD8	-3,1376349	0,003417803	down
agiseq44151	SSUH2	-1,7880408	0,003428147	down
agiseq35324	C11orf82	2,2284919	0,003447631	up
agiseq32829	FAM64A	2,1221476	0,003466636	up
agiseq44067	SMPD3	-1,7176511	0,003468473	down
agiseq2309	TCF15	2,2010815	0,003477908	up
agiseq48258	PLK1	2,2328319	0,003500343	up
agiseq34168	SLC6A8	2,0019263	0,003500343	up
agiseq889	ITGA3	1,8511373	0,00353054	up
agiseq25899	C12orf75	1,8980237	0,003533251	up
agiseq42176	SLC16A7	-2,0887735	0,003541771	down
agiseq13464	ZBTB16	-2,5251511	0,003541771	down
agiseq38276	CKS1B	1,7200278	0,003543688	up
agiseq35485	ENPP4	-1,7988435	0,003551919	down

agiseq20033	UBE2T	2,7452434	0,003563011	up
agiseq21738	PRDM16	-2,65119	0,003563011	down
agiseq10764	PLAC8	-2,3796089	0,003563011	down
agiseq4525	LOC100128252	-2,1552295	0,00359221	down
agiseq5004	TENC1	-1,6410045	0,00360792	down
agiseq21433	TRIM59	1,6069729	0,003619688	up
agiseq8484	ATP2A3	-2,6659774	0,003619688	down
agiseq30600	GBP5	2,7311446	0,00363209	up
agiseq31436	FSCN1	2,3480743	0,00363209	up
agiseq41218	HOXA2	-1,9504375	0,00363209	down
agiseq19275	PRB1	-6,5952761	0,00363209	down
agiseq29032	MEDAG	-2,2200997	0,00363209	down
agiseq138	ACACB	-1,8108379	0,003671635	down
agiseq14275	B4GALNT4	1,6578228	0,003671635	up
agiseq32591	CDT1	3,0473104	0,003671635	up
agiseq12641	LOC100507165	-1,8092929	0,003671635	down
agiseq40575	HSPB8	-3,1480941	0,003708168	down
agiseq15392	SNORD116-11	-1,816282	0,00370981	down
agiseq40127	ZNF540	-1,808707	0,003710055	down
agiseq4483	TGFBR2	-1,8035568	0,003710055	down
agiseq24663	CEACAM3	-2,3921604	0,003710055	down
agiseq39363	FEN1	1,7826206	0,003718471	up
agiseq36180	SLCO2A1	-1,6398864	0,003743757	down
agiseq44408	FRZB	-3,6718908	0,003750556	down
agiseq21995	MAN1C1	-1,7471191	0,003750556	down
agiseq12857	MKI67	2,7171643	0,003760275	up
agiseq7505	CLDN10	-3,087521	0,003798935	down
agiseq29658	PNPLA7	-1,8272338	0,003806205	down
agiseq13195	HMMR	2,4714718	0,003806205	up
agiseq36079	PDE2A	-2,1008973	0,003806205	down
agiseq37972	CFH	-2,0917975	0,003806205	down
agiseq31370	THSD4	-2,2455184	0,003815521	down
agiseq7243	COL5A1	1,7589762	0,003815521	up
agiseq20813	WDR66	3,2362642	0,003829968	up
agiseq26960	PHYHIP	-2,3617303	0,003829968	down
agiseq7789	PCM1	-1,6585299	0,003882014	down
agiseq5357	P2RY14	-1,688187	0,003882014	down
agiseq8507	ROR1	-1,9624535	0,003886807	down
agiseq12036	XLOC_011183	-1,7941742	0,003930175	down
agiseq40082	TPX2	2,7254325	0,003980482	up
agiseq42541	GULP1	-2,0896806	0,003980482	down
agiseq17984	ERBB4	-3,7681015	0,003980482	down
agiseq31211	XLOC_007433	-2,4558512	0,003987039	down
agiseq27502	KBTBD11	-1,9543154	0,004006458	down
agiseq20031	CENPF	2,8214586	0,004023754	up
agiseq38121	ATP2A3	-2,3324496	0,00402422	down
agiseq23688	JAM2	-1,9734537	0,00403828	down
agiseq40474	LAMB3	2,5748085	0,004051753	up
agiseq35687	CACNB2	-1,8146455	0,004070594	down
agiseq47354	RECQL4	1,9982888	0,004072621	up
agiseq43368	HPGD	-2,9725826	0,004072621	down

agiseq22502	FXYD1	-1,7072444	0,004087075	down
agiseq48625	ASF1B	1,7244722	0,004087075	up
agiseq21225	LOC100509205	1,6979248	0,004087075	up
agiseq48678	BID	1,8838282	0,004087075	up
agiseq14609	CAB39L	-1,7449454	0,004087075	down
agiseq44359	MAD2L1	1,8403173	0,004087075	up
agiseq40836	SLC26A2	-1,9687571	0,004087075	down
agiseq4343	DHH	-1,9585486	0,004087075	down
agiseq194	LOC400456	-2,0829445	0,004087075	down
agiseq48575	SLC52A1	2,4411441	0,004087075	up
agiseq50653	SVOPL	-2,2937547	0,004087075	down
agiseq18301	ADAMTS2	1,7759238	0,004087075	up
agiseq3055	HGD	-2,0249929	0,004087075	down
agiseq13368	CHRNA5	1,8390205	0,004105492	up
agiseq20179	JAM2	-2,1646416	0,004105492	down
agiseq23951	RHOJ	-1,9702449	0,004105492	down
agiseq40699	IGJ	-2,8557271	0,004105492	down
agiseq2304	LONRF3	-2,3926448	0,004105492	down
agiseq36709	LMF1	-2,7617417	0,004105492	down
agiseq1858	XLOC_005935	1,7582089	0,004105492	up
agiseq10700	NPDC1	-2,0194634	0,004105492	down
agiseq3001	MAP6D1	1,7115215	0,004119337	up
agiseq7699	C1QTNF6	2,026012	0,004140036	up
agiseq13618	CEP72	1,7411551	0,004154559	up
agiseq44771	AMPD1	-2,8880713	0,004154559	down
agiseq6009	RGN	-2,5682338	0,004193366	down
agiseq22310	AZGP1	-4,2195996	0,004200649	down
agiseq28289	GPRASP1	-1,6502471	0,004219548	down
agiseq2284	ME3	-1,8256571	0,004233894	down
agiseq16796	RIMS4	-1,964525	0,004251067	down
agiseq44634	ACTL6A	1,5969449	0,004253777	up
agiseq31705	GUCA2B	-2,3603489	0,004256418	down
agiseq16563	KAZALD1	-1,891615	0,004256418	down
agiseq6557	FRMD3	-1,9925334	0,004274853	down
agiseq13404	F10	-1,9939097	0,004276705	down
agiseq5008	XLOC_l2_008140	-2,0603163	0,004285517	down
agiseq2862	DTL	2,6847545	0,004286964	up
agiseq48195	XLOC_009649	2,3193379	0,004351798	up
agiseq6529	LEPR	-3,4272033	0,004362606	down
agiseq32951	LOC100506965	-1,7739529	0,004362606	down
agiseq42455	DLC1	-1,6180379	0,004362606	down
agiseq36584	COL21A1	-2,9664134	0,004362873	down
agiseq23917	NR2F2	-1,7984262	0,004374904	down
agiseq34638	KIF2C	2,2651995	0,004374904	up
agiseq5325	NDNF	-2,3121235	0,004374904	down
agiseq36987	MIA	-4,5377631	0,004374904	down
agiseq20656	MAN1C1	-1,6554457	0,004374904	down
agiseq30250	PTGIS	-2,5989477	0,004375823	down
agiseq49625	C7orf41	-2,0663282	0,004376249	down
agiseq17453	RFC4	2,0680591	0,004396629	up
agiseq39814	C17orf53	1,7709765	0,004396629	up

agiseq35220	RTN4R	1,6372503	0,004396629	up
agiseq38244	AURKA	2,1924934	0,004396629	up
agiseq1072	ACOX2	-2,0358307	0,004396629	down
agiseq33183	PPAPDC1A	2,9263273	0,004396629	up
agiseq25170	GULP1	-1,8997998	0,004396629	down
agiseq17292	NEIL1	-1,5976343	0,004396629	down
agiseq21233	NCAPH2	1,6018159	0,004415113	up
agiseq21748	SPC24	2,3428013	0,004415113	up
agiseq6890	MKI67	1,8777465	0,004446951	up
agiseq18846	CACNB2	-2,1556166	0,004448426	down
agiseq91	TREM1	2,0104538	0,004451526	up
agiseq19422	RBL1	1,8216054	0,004454698	up
agiseq20571	CHEK1	2,1542001	0,004454698	up
agiseq6490	COL7A1	2,1071857	0,004454698	up
agiseq12068	XLOC_l2_001134	2,2379288	0,004454698	up
agiseq4545	C10orf35	1,666929	0,004454698	up
agiseq34102	COL5A1	2,0903288	0,004454698	up
agiseq3000	ZNF385D	-1,9600727	0,004475032	down
agiseq46918	LOC100506027	2,4427241	0,004475032	up
agiseq1099	DSCC1	1,7970142	0,004488729	up
agiseq31357	FGF2	-1,5886678	0,004515126	down
agiseq39931	ZNF415	-1,8816574	0,004518702	down
agiseq43209	CDH3	2,0268188	0,004562429	up
agiseq15197	MMP9	2,1566555	0,004567908	up
agiseq37563	FOLR1	-3,4339226	0,00457282	down
agiseq35181	WBSCR17	-1,6159041	0,004587685	down
agiseq28340	XLOC_l2_009441	1,5981827	0,004599566	up
agiseq44077	NRIP3	1,8418921	0,004599566	up
agiseq37387	LOC100507460	1,7727743	0,004599566	up
agiseq17316	BORA	1,7540254	0,004599566	up
agiseq24426	KAT2B	-1,7421104	0,004599566	down
agiseq18288	RBM47	-1,5953733	0,004599566	down
agiseq37689	SPAG5	2,2500869	0,004599566	up
agiseq15723	CCNB1	2,2223123	0,004599566	up
agiseq6358	FAM189A2	-3,0752377	0,004599566	down
agiseq41086	TMPRSS5	-2,11345	0,004599566	down
agiseq35588	ANG	-2,3024114	0,004599566	down
agiseq20923	VGLL3	-1,7731628	0,004599566	down
agiseq46374	GTSF1	2,2018772	0,004599566	up
agiseq45404	TNFRSF12A	1,7803921	0,004599566	up
agiseq14853	MSMB	-5,3520982	0,004599566	down
agiseq45862	RNFT2	2,81473	0,004610559	up
agiseq46660	DIO3	-2,7183728	0,004640194	down
agiseq486	SELP	-1,7375343	0,004643001	down
agiseq39622	ZWINT	2,1372821	0,004676056	up
agiseq15910	RCAN2	-1,9270908	0,004737134	down
agiseq24247	CD24	-2,1948378	0,004737134	down
agiseq17331	LOC100506948	-1,7918593	0,004753019	down
agiseq5	KIF20A	2,2114601	0,004755975	up
agiseq7420	CTGF	-1,6009299	0,004755975	down
agiseq31988	LOC100652839	1,9958523	0,004796593	up

agiseq3566	KIAA1324	-3,361016	0,004796593	down
agiseq6319	GINS2	2,2816613	0,004806686	up
agiseq44743	LOC100506673	-1,673915	0,004808974	down
agiseq31494	ATP8A1	-1,7772164	0,004808974	down
agiseq21974	LOC100506965	-1,7942086	0,004808974	down
agiseq4475	CDK1	2,843502	0,004831245	up
agiseq34308	ZBTB20	-1,7229438	0,004870195	down
agiseq10790	LOC100505976	-1,6653718	0,004870195	down
agiseq41500	XLOC_l2_008991	-1,6171607	0,004870195	down
agiseq33639	DCLK1	-2,0994349	0,004870195	down
agiseq19347	NDC80	2,2015903	0,004870195	up
agiseq21720	KNSTRN	1,6189978	0,004889742	up
agiseq22072	KRT17	2,5196932	0,004917831	up
agiseq34780	SOX10	-2,366884	0,004944026	down
agiseq46028	CDCA3	1,8734166	0,004954899	up
agiseq15282	THBS2	1,7886826	0,004997936	up
agiseq49333	SLC13A3	-1,9682883	0,00500619	down
agiseq12105	TRIB3	1,9028323	0,005032518	up
agiseq8483	ST6GALNAC2	1,6573978	0,005045418	up
agiseq31115	SYT12	1,9647718	0,005049125	up
agiseq39866	NUCB2	-1,9177812	0,005049125	down
agiseq34277	CEACAM3	-2,3279764	0,005049125	down
agiseq2116	ULBP1	2,8330668	0,005090353	up
agiseq36471	XLOC_010813	1,598814	0,005090353	up
agiseq35509	GPR158	2,2035408	0,005093399	up
agiseq43458	C6orf147	1,6953312	0,005156536	up
agiseq24079	BMX	-1,6311777	0,005212315	down
agiseq29041	HGF	-1,5900093	0,005212315	down
agiseq46027	FGF7	-2,0238396	0,005212315	down
agiseq3752	ADAMTS14	1,7052685	0,005212315	up
agiseq11501	CXCL12	-1,6615466	0,005212315	down
agiseq1175	APOC2	2,0208652	0,005241174	up
agiseq44619	CDO1	-2,9694716	0,005241174	down
agiseq3380	GCNT3	-2,5766359	0,005241174	down
agiseq27438	KIF26B	1,6011039	0,005259283	up
agiseq16779	ITM2A	-1,7484028	0,005259283	down
agiseq3640	PPARG	-2,0438059	0,005259283	down
agiseq47609	GABRP	-2,0514421	0,005259283	down
agiseq42210	RBP4	-3,3786258	0,005356903	down
agiseq14890	NCAPD2	1,6227473	0,005382703	up
agiseq35729	CORIN	-2,297312	0,005383856	down
agiseq43264	NETO2	1,9167149	0,005399179	up
agiseq48997	KHDC1	1,8603203	0,005404734	up
agiseq6932	CYBRD1	-1,8274962	0,005405829	down
agiseq8287	POTEM	3,144955	0,00541766	up
agiseq34700	MYZAP	-2,9356877	0,005465343	down
agiseq49414	TMEM132C	-1,962531	0,005465343	down
agiseq17111	MGC16121	1,6087092	0,005465343	up
agiseq39278	INPP4B	-1,5851929	0,005472995	down
agiseq39955	FMO5	-2,6846234	0,005495799	down
agiseq35475	MIR100HG	-2,0753137	0,005514727	down

agiseq26005	SLC15A2	-1,6105553	0,005514727	down
agiseq9910	BID	1,7548463	0,005515555	up
agiseq10564	ZSCAN18	-1,8256882	0,005542893	down
agiseq13514	KCNK5	-1,764671	0,005542893	down
agiseq45981	ANKRD35	-2,1918095	0,005564302	down
agiseq45333	CRLF1	-2,3334519	0,005576333	down
agiseq2068	SNORD64	-1,6590435	0,005577279	down
agiseq42880	CLMN	-1,9561308	0,005577279	down
agiseq1867	FAM229B	-1,7344685	0,005591091	down
agiseq20476	PLEKHH2	-2,1540496	0,005591091	down
agiseq3429	KIF13B	-1,716797	0,005591091	down
agiseq4916	SV2B	-1,6324777	0,005591091	down
agiseq10	POLQ	2,0396821	0,005608951	up
agiseq24489	XLOC_l2_014802	-1,8975494	0,005661559	down
agiseq16336	CHTF18	1,6329227	0,005661559	up
agiseq10913	F13A1	-1,9743017	0,005661559	down
agiseq5386	STAT1	2,1101476	0,005662304	up
agiseq32237	CFD	-1,9260317	0,005677673	down
agiseq26276	USP18	1,8363824	0,005699788	up
agiseq31248	MGLL	-2,0138342	0,005780942	down
agiseq16897	AGFG2	-1,782141	0,005807554	down
agiseq10172	CXCL12	-1,6965064	0,005819799	down
agiseq29755	XLOC_003986	1,7817892	0,005837439	up
agiseq48391	TTYH1	-1,7833622	0,00586365	down
agiseq33900	FRMD3	-1,737723	0,005865744	down
agiseq25734	ATP12A	-3,2292943	0,005888524	down
agiseq42600	IFI6	2,0616115	0,005926162	up
agiseq28735	MUC5B	-5,3082095	0,005926162	down
agiseq5770	XLOC_001035	-1,6963632	0,005943258	down
agiseq25160	IPW	-1,6737063	0,005943258	down
agiseq35843	TSGA10	-1,6589645	0,005958599	down
agiseq45652	FAM72D	2,1766997	0,005975882	up
agiseq28635	CKS2	2,2301646	0,005975882	up
agiseq18530	KIAA1211L	-2,187808	0,005975882	down
agiseq20252	DNAH14	1,6275837	0,005975882	up
agiseq17748	LDOC1	-2,0623923	0,005979133	down
agiseq25709	CERS1	-2,0202175	0,006028664	down
agiseq24791	AMOT	-2,0169931	0,006056567	down
agiseq26189	ELN	-1,7848756	0,00611174	down
agiseq20151	GINS1	2,1767178	0,00611174	up
agiseq13039	PRB1	-4,2943822	0,00611174	down
agiseq3202	FUT6	-1,9028674	0,00611174	down
agiseq48879	PIP	-6,3338824	0,006163175	down
agiseq9375	STAC2	-2,056015	0,006185848	down
agiseq38306	APOC1	2,5065224	0,006189405	up
agiseq16225	ANKRD20A5P	-2,0329087	0,006189405	down
agiseq18586	FBLN5	-1,6331857	0,006250892	down
agiseq3670	INHBA	2,0350912	0,006250892	up
agiseq865	WDR66	2,5933136	0,006250892	up
agiseq20978	LDB2	-1,6785932	0,006256243	down
agiseq45813	USP41	1,8260849	0,006260169	up

agiseq33132	CLU	-2,4631499	0,006339308	down
agiseq23866	RNF180	-1,9687368	0,006341631	down
agiseq37429	LOC100507460	1,8868466	0,006343867	up
agiseq34194	SHE	-1,6397566	0,006343867	down
agiseq37911	GSTA2	-2,5321392	0,006343867	down
agiseq9399	LOC344887	3,0079421	0,006343867	up
agiseq15140	GAL	2,5033163	0,006362677	up
agiseq6124	LOC100506798	2,288389	0,006362794	up
agiseq3100	MSRA	-1,5920745	0,006387289	down
agiseq45403	CENPN	1,9756481	0,006387289	up
agiseq3516	RGS11	-1,7450339	0,006405786	down
agiseq40264	PTGER3	-1,702175	0,006405786	down
agiseq14576	IFIT1	2,0688558	0,006424731	up
agiseq34634	ADARB2	-1,7221782	0,006426417	down
agiseq24148	CLTCL1	1,6468154	0,006443836	up
agiseq18734	LOC100132774	1,9766291	0,006443836	up
agiseq14981	LOC646903	1,6220787	0,00647711	up
agiseq44414	AQP7P1	-2,449444	0,00647711	down
agiseq27863	IL4I1	2,1767331	0,00647711	up
agiseq2006	CNTNAP3	-1,8886309	0,00647711	down
agiseq28501	SYBU	-1,8784221	0,00647711	down
agiseq35458	EMCN	-1,7717819	0,006491823	down
agiseq38447	RAB9B	-1,85026	0,006492026	down
agiseq21180	MCM5	1,5910953	0,006501988	up
agiseq6004	XLOC_014255	1,6284899	0,006501988	up
agiseq12141	CP	-1,8499439	0,006501988	down
agiseq2865	GGTA1P	-2,0560869	0,006501988	down
agiseq37902	PKDCC	-2,3045929	0,006501988	down
agiseq31274	ARSI	2,1232154	0,006501988	up
agiseq33174	ZFP2	-1,601377	0,006501988	down
agiseq127	AQP3	-2,0031865	0,006501988	down
agiseq27678	SASH1	-1,7905958	0,006501988	down
agiseq49010	MICAL3	1,6643534	0,006501988	up
agiseq27839	BEX5	-1,9229171	0,006501988	down
agiseq41257	KRT42P	2,2593365	0,006501988	up
agiseq41847	XLOC_l2_009442	2,8569874	0,006501988	up
agiseq48251	SMOC2	-1,6907892	0,006528315	down
agiseq25941	ZC3H12B	-1,6927142	0,00659165	down
agiseq29677	ITGA11	1,7795826	0,006709939	up
agiseq27185	LOC100653147	2,3462119	0,006709939	up
agiseq22122	ZNF300P1	-1,926215	0,006709939	down
agiseq38996	S100B	-2,3853345	0,006714467	down
agiseq32482	COL3A1	1,9016097	0,006715246	up
agiseq31104	PLK1	1,6553772	0,006721669	up
agiseq17205	JAM2	-1,6221684	0,006721669	down
agiseq48608	PFN2	1,6707447	0,006727992	up
agiseq20056	DNM3	-1,6887181	0,00673735	down
agiseq34211	GSN	-1,5842335	0,006738598	down
agiseq21193	GBP1P1	1,6541454	0,006746335	up
agiseq14787	HIST1H2AL	1,8276025	0,006750213	up
agiseq28725	KIF11	2,0268539	0,006750213	up

agiseq23007	EBF1	-1,7213425	0,006750213	down
agiseq48747	LOC100507474	2,3446155	0,006750767	up
agiseq2265	NRIP3	1,6468488	0,006773503	up
agiseq3581	ORC6	1,6926223	0,006773503	up
agiseq30439	CBX8	1,7077826	0,006773503	up
agiseq1797	CCNA2	2,2463468	0,006773503	up
agiseq46108	GLDN	-2,0772652	0,006773503	down
agiseq106	LOC339240	2,3328325	0,006773503	up
agiseq50180	TMPRSS2	-2,0344108	0,006773503	down
agiseq42535	COL4A1	1,6257092	0,006773503	up
agiseq43454	PIGR	-5,1320712	0,006773503	down
agiseq25248	FAM89A	1,6253397	0,006774755	up
agiseq23360	EXTL1	-1,83765	0,006774755	down
agiseq29413	CDCA2	2,4484041	0,00677597	up
agiseq23707	XLOC_l2_009441	1,908892	0,006798969	up
agiseq43605	PRC1	1,9944677	0,006798969	up
agiseq39778	UPI00000726DE	-1,7905665	0,006798969	down
agiseq44319	CCNB2	2,6204674	0,006798969	up
agiseq36548	HJURP	2,6857015	0,006798969	up
agiseq28479	FN1	2,1675231	0,006798969	up
agiseq26251	SLC7A2	-2,2762447	0,006798969	down
agiseq39500	LYVE1	-2,595275	0,006798969	down
agiseq7922	XXYLT1	1,6541093	0,006857534	up
agiseq2533	BIRC5	3,1010729	0,00696524	up
agiseq50300	MAGI2-AS3	-1,8072962	0,00696524	down
agiseq46045	DHRS2	4,1912335	0,00696524	up
agiseq14546	COL4A6	1,9880714	0,00696524	up
agiseq42162	RIBC2	1,9582415	0,006968914	up
agiseq8761	DEPDC1	1,9822759	0,006993592	up
agiseq23204	NDRG2	-1,5923611	0,006993592	down
agiseq32628	DLX5	2,2719335	0,006993592	up
agiseq38455	TMEM125	-2,2996463	0,007044966	down
agiseq13134	MYO5C	-1,7872298	0,007047538	down
agiseq37915	ANKRD30BP2	-2,1193487	0,007047538	down
agiseq36815	KIF20B	1,6227653	0,007051522	up
agiseq46239	SOX8	-1,8522433	0,007051522	down
agiseq39485	NDUFA4L2	2,0204319	0,007051522	up
agiseq33207	INA	2,0944584	0,007051522	up
agiseq32654	EBF1	-1,7157488	0,007051522	down
agiseq15603	FZD4	-1,6653983	0,007051522	down
agiseq33659	SRD5A2	-2,7678039	0,007051522	down
agiseq305	IDO1	2,6766716	0,007051522	up
agiseq11694	NKX3-1	-2,8742872	0,007051522	down
agiseq20574	LOC388630	-2,3156372	0,007051522	down
agiseq13660	COL6A5	-1,6512628	0,007051522	down
agiseq14305	MAL	-4,0462388	0,007051522	down
agiseq42481	SLC6A8	1,6947161	0,007051522	up
agiseq15853	SLPI	-3,1191723	0,007051522	down
agiseq8936	CYP3A5	-2,1139213	0,007064692	down
agiseq37051	SYNPO2	-2,0549656	0,007075446	down
agiseq14174	CCL21	-2,45811	0,007118236	down

agiseq16461	CYP3A7	-1,9399326	0,007118236	down
agiseq4600	FGD6	1,6148404	0,007123673	up
agiseq41044	GPR19	2,1401801	0,007193163	up
agiseq50580	PTTG1	2,049481	0,007253777	up
agiseq14297	LOC400958	-3,0011822	0,007260035	down
agiseq26176	SRPX	-2,5542061	0,007260607	down
agiseq28169	RRM2	2,0943414	0,007272359	up
agiseq36808	XLOC_003399	2,7036134	0,007272359	up
agiseq36018	BUB1B	2,3465275	0,007272359	up
agiseq26013	STK39	-1,7115337	0,007272359	down
agiseq37831	MCM4	2,0294087	0,007282783	up
agiseq25726	VSIG2	-2,2020988	0,007282783	down
agiseq35356	LOC100507226	-1,7952248	0,007288805	down
agiseq4472	TRPM2	1,7730527	0,007295993	up
agiseq1599	CYP4X1	-3,2184179	0,007357195	down
agiseq15487	SGOL1	1,6700294	0,007359991	up
agiseq17264	SLC12A2	-2,2877396	0,007377001	down
agiseq16537	CYP1B1-AS1	-1,6511358	0,007377183	down
agiseq11953	MUSTN1	-1,6355962	0,007415384	down
agiseq9084	VSIG10L	-2,4791921	0,007415384	down
agiseq41435	LOC440910	2,8782741	0,007417399	up
agiseq15482	ZNF300P1	-1,7995521	0,007430741	down
agiseq25074	UBE2S	1,635335	0,007458314	up
agiseq1775	XLOC_009378	2,0588329	0,007458314	up
agiseq39647	GINS4	2,1345408	0,007458314	up
agiseq26513	PRB3	-4,7917461	0,007458314	down
agiseq43388	NCMAP	-2,9610914	0,007458314	down
agiseq1573	STXBP6	-1,9316956	0,007458314	down
agiseq48875	FAM149A	-1,6302244	0,007461603	down
agiseq4707	MUC5AC	-3,3250317	0,007461603	down
agiseq16265	COL27A1	1,6275812	0,007489775	up
agiseq35522	BAG2	1,6842415	0,0075174	up
agiseq31937	AQP5	-2,1737192	0,0075174	down
agiseq39808	SRL	-1,9398052	0,0075174	down
agiseq29949	CDCA8	1,9057713	0,007523696	up
agiseq10266	SKP2	1,7372975	0,007523696	up
agiseq13947	LAMA2	-1,7837052	0,007605147	down
agiseq24678	CENPM	1,9600773	0,007670534	up
agiseq11550	UBE2C	2,594735	0,007670534	up
agiseq10277	LEPR	-2,5361716	0,007670534	down
agiseq20830	Q6TXI9	-1,5858786	0,007670534	down
agiseq44283	LOC100507309	-1,7217978	0,00768356	down
agiseq32268	CDC20	1,8806484	0,007686091	up
agiseq2232	TFRC	1,619891	0,007686091	up
agiseq32887	XLOC_l2_009442	2,3751791	0,00768832	up
agiseq38145	TLE2	-1,6150628	0,00771635	down
agiseq15966	TMEM158	1,8153454	0,007716602	up
agiseq20396	SNORD113-9	-1,7542485	0,007716602	down
agiseq41686	ITGA10	-2,1128464	0,007716602	down
agiseq18205	OAS3	1,8056779	0,007741867	up
agiseq42990	SOBP	-1,593161	0,007820854	down

agiseq4274	UHRF1	1,9806738	0,007887129	up
agiseq43901	DSG2	1,8301319	0,007921609	up
agiseq11082	NXPH3	-1,6755918	0,007929086	down
agiseq20286	RACGAP1	1,6704963	0,007929146	up
agiseq17853	SHCBP1	1,9024976	0,007936642	up
agiseq23420	KREMEN1	1,7089538	0,007936642	up
agiseq3292	ATP10B	-2,493159	0,007958114	down
agiseq23164	NEB	1,8100598	0,007991247	up
agiseq14391	NANOG	-1,6716292	0,007991247	down
agiseq31135	CT45A1	3,9894653	0,007991247	up
agiseq12733	AFF3	-1,7922331	0,008056357	down
agiseq8904	C10orf10	-1,8843417	0,008056532	down
agiseq9220	MOCOS	1,5826587	0,008113123	up
agiseq48317	MLPH	-1,7503483	0,008113123	down
agiseq20945	XLOC_l2_010636	-2,0197368	0,008113123	down
agiseq15472	PROS1	-1,7409795	0,008113123	down
agiseq1199	RBMS3	-1,6851857	0,00814815	down
agiseq17245	IFI27	1,7428287	0,008206581	up
agiseq44402	PLIN4	-2,4099671	0,008206581	down
agiseq6217	XLOC_014508	-1,6853615	0,008219216	down
agiseq28366	RAD54L	2,4617628	0,008310274	up
agiseq7664	NGFR	-1,7267145	0,008310274	down
agiseq49589	TUBB2B	-1,5858144	0,008310274	down
agiseq435	LOC100506305	1,739865	0,00837607	up
agiseq3775	CCL21	-2,3674677	0,00837607	down
agiseq41923	XRCC3	1,614596	0,008378663	up
agiseq14417	KLRB1	-1,7085554	0,008378663	down
agiseq48909	BUB1	2,4717618	0,008421442	up
agiseq19390	XLOC_l2_010636	-2,0221448	0,008432608	down
agiseq30374	LOC400550	-1,6558466	0,008432608	down
agiseq46411	SLC2A1	1,8851777	0,008433652	up
agiseq8678	KLHL7	1,6521337	0,008483501	up
agiseq40360	RMI2	2,06838	0,008483501	up
agiseq18587	PTTG2	1,8832203	0,008483501	up
agiseq3889	PIF1	2,0189909	0,008483501	up
agiseq5174	CKMT2	-1,9552841	0,008483501	down
agiseq13932	VSIG10L	-2,4507199	0,008483501	down
agiseq11776	FERMT1	2,1453735	0,008483501	up
agiseq19523	CTSG	-2,491541	0,008483501	down
agiseq25106	PCOLCE2	-2,7107001	0,008483501	down
agiseq38047	SHOX2	1,6314436	0,008483501	up
agiseq5737	OSBPL6	1,7147136	0,008509084	up
agiseq25450	SMC4	1,7292047	0,008509084	up
agiseq3494	ANKRD36	-1,5827128	0,008509084	down
agiseq12461	RAB17	-2,5718197	0,008526575	down
agiseq9207	AIG1	1,5810361	0,008532666	up
agiseq15064	LOC100506660	1,64099	0,008557582	up
agiseq40721	RCAN2	-1,5993027	0,008557582	down
agiseq45261	XLOC_006200	2,3416897	0,008588536	up
agiseq12929	LOC100507311	-1,5822731	0,008611562	down
agiseq41841	KIF15	1,9827429	0,008611562	up

agiseq31692	TJP3	-1,6862468	0,008611562	down
agiseq34707	SNORD114-3	-1,7345214	0,008654473	down
agiseq8372	PTX3	-2,882761	0,008654473	down
agiseq35642	LOC100652963	-1,6418189	0,00866384	down
agiseq27527	LOC100506714	1,6111897	0,008695583	up
agiseq37687	B4GALNT1	1,6379805	0,008717998	up
agiseq2201	FANCI	1,7699148	0,008717998	up
agiseq25874	ISG15	2,1868473	0,008717998	up
agiseq5136	HIST2H3A	2,5407343	0,008758652	up
agiseq9109	CDKN3	2,0761033	0,008785516	up
agiseq28591	TRNP1	-2,3702405	0,008825595	down
agiseq27859	EBF3	-1,8865467	0,008827293	down
agiseq21269	LOC100506966	-2,4175436	0,008942387	down
agiseq27982	SOBP	-1,6515839	0,008955001	down
agiseq30018	SPNS2	-1,9706979	0,008955001	down
agiseq30389	MAPK12	1,7817435	0,008955001	up
agiseq33251	DIAPH3	1,8882503	0,008955001	up
agiseq33268	NANOS1	1,6881606	0,008955001	up
agiseq8972	C2CD4B	-1,6617633	0,009061793	down
agiseq26719	LMOD1	-2,0754763	0,009082273	down
agiseq237	THSD4	-2,6848591	0,009154282	down
agiseq24286	HIST1H2BF	1,8569786	0,009154282	up
agiseq31537	FERMT1	1,7132476	0,009160695	up
agiseq16100	SLAIN1	-1,6501839	0,009167239	down
agiseq49586	MGLL	-1,6644877	0,009378451	down
agiseq40455	C1QL1	1,9526364	0,009412862	up
agiseq7450	FANCA	1,8927889	0,009412917	up
agiseq36913	ADH1A	-1,965838	0,009461947	down
agiseq7265	GPD1	-1,7160057	0,009466562	down
agiseq28020	CEACAM7	-2,2961574	0,009466562	down
agiseq7898	HIST1H3F	1,6297947	0,009468363	up
agiseq47310	XLOC_l2_012871	1,789794	0,009468363	up
agiseq1588	CLCN2	1,663358	0,009493481	up
agiseq6604	HDC	-1,702942	0,009519129	down
agiseq30216	CYP2C9	-2,1427734	0,009519129	down
agiseq32995	LOC100128881	1,9242347	0,009602848	up
agiseq12027	KGFLP1	-1,8103528	0,009611571	down
agiseq6701	EPHB6	-1,7816692	0,009640135	down
agiseq11364	FAM221A	-1,6867991	0,009640135	down
agiseq21603	SPINK8	-1,7976826	0,009640135	down
agiseq15976	JPH1	1,6416849	0,009640135	up
agiseq1750	CPLX3	-1,6880844	0,009651229	down
agiseq11715	KRT83	-2,253404	0,009675548	down
agiseq13471	SEPP1	-1,6596608	0,009788035	down
agiseq745	THSD7A	-1,75499	0,009825808	down
agiseq896	SEZ6L2	1,7615148	0,009825808	up
agiseq17114	BPIFB2	-2,2879523	0,009835183	down
agiseq41248	LOC100505729	1,5826339	0,009836804	up
agiseq26300	NUSAP1	2,3525692	0,009911268	up
agiseq27452	IL1RAP	1,8240069	0,009911268	up
agiseq1	IL1B	1,5963328	0,009911268	up

agiseq39436	SPATA6	-1,628371	0,009958024	down
agiseq15808	ASPM	2,806965	0,009958024	up
agiseq36861	XLOC_010828	1,6403576	0,010006111	up
agiseq35654	OAS3	1,8815914	0,010006111	up
agiseq38036	MAP2	-1,7920055	0,01000875	down
agiseq29220	AQP3	-1,9780913	0,01000875	down
agiseq5643	CAMK2N2	2,4385562	0,01000875	up
agiseq4481	PKDCC	-1,737928	0,010067989	down
agiseq46358	PID1	-1,5839144	0,010113777	down
agiseq5385	IL8	1,766261	0,010113777	up
agiseq19715	KLK12	-2,1916482	0,010113777	down
agiseq34242	PAX9	-1,8475206	0,010188496	down
agiseq25962	MAGI2-AS3	-1,6565251	0,010222328	down
agiseq5848	ACTA1	1,6226416	0,010222328	up
agiseq31794	COL28A1	-2,0206926	0,010222328	down
agiseq29555	LINC00472	-1,6000029	0,010441237	down
agiseq9448	KTN1-AS1	1,6684359	0,010485059	up
agiseq45853	GATM	-1,6567616	0,010599015	down
agiseq31553	CLCN4	-1,7177678	0,010618973	down
agiseq19232	IL1RAP	1,8955666	0,010618973	up
agiseq36826	SPATA18	-1,7955056	0,010624482	down
agiseq40864	TSPAN12	-1,8270694	0,010716252	down
agiseq3021	KIAA0101	2,1251366	0,010716252	up
agiseq46397	KRT14	1,8991853	0,010716252	up
agiseq49419	IRF6	1,6331828	0,010759312	up
agiseq9393	DLG2	-1,9410088	0,010809718	down
agiseq4399	ESR1	-1,6833477	0,010809718	down
agiseq34282	MIR205HG	1,7124151	0,010829762	up
agiseq5350	LOC100506123	-1,6032404	0,010848442	down
agiseq32812	LOC651536	-1,5849647	0,010980972	down
agiseq18100	WDHD1	1,7271899	0,011097269	up
agiseq5435	B3GNT5	1,7355084	0,011138782	up
agiseq42527	CNR1	-2,1966039	0,011138782	down
agiseq27163	DNAPTP3	1,7267213	0,011152606	up
agiseq11462	TDRD6	-1,728568	0,011152606	down
agiseq34470	KCNMA1	-1,6558724	0,011210215	down
agiseq2494	MND1	1,6903503	0,011228415	up
agiseq14033	CENPE	1,9742543	0,011248305	up
agiseq4370	AR	-1,8603239	0,011300811	down
agiseq7261	XLOC_009782	2,5898149	0,011309351	up
agiseq11444	ADARB2	-1,9421775	0,011323623	down
agiseq11401	BCKDHB	-1,610672	0,011396969	down
agiseq4849	CYTL1	-3,0704659	0,011402567	down
agiseq30365	SNORD114-15	-1,6575141	0,011402567	down
agiseq33885	FOXP3	1,6897449	0,011419456	up
agiseq18132	ANKRD26P3	1,8297661	0,01155097	up
agiseq32458	PHYHD1	-2,1694333	0,011566791	down
agiseq28588	SNORD86	1,6521375	0,011576719	up
agiseq24442	CYTL1	-3,2417521	0,011576719	down
agiseq18382	PTN	-2,172642	0,011580399	down
agiseq53	CTAG2	2,4078119	0,011660056	up

agiseq22700	BAIAP2L2	1,8934133	0,011672368	up
agiseq8994	ART4	-2,0910213	0,011672368	down
agiseq21534	POLE2	1,5957645	0,011691434	up
agiseq2110	GLYATL2	-1,6353742	0,011691434	down
agiseq24013	CEACAM6	-2,3876297	0,011701888	down
agiseq6995	SPDEF	-2,3547973	0,011724777	down
agiseq7214	ITPKA	1,8820876	0,011725855	up
agiseq11337	ADAMTS1	-1,583753	0,011725855	down
agiseq17871	TIMP3	-1,8955468	0,011725855	down
agiseq2510	SNORD114-23	-1,6767985	0,011733731	down
agiseq45152	PRB3	-3,4719637	0,011758145	down
agiseq551	PRUNE2	-1,7322889	0,011832953	down
agiseq16357	OAS2	1,6698853	0,01185872	up
agiseq39343	FBLN1	-1,5815405	0,01185872	down
agiseq729	PIK3R1	-1,9494108	0,011955048	down
agiseq33789	POU4F1	1,904127	0,012018583	up
agiseq47622	ENO2	1,5928791	0,012022268	up
agiseq10841	LOC100506123	-1,6209828	0,012070747	down
agiseq45906	LAMP3	2,6545271	0,012070747	up
agiseq29196	HP	-2,8680788	0,012070747	down
agiseq27682	C21orf90	1,9293358	0,012126559	up
agiseq11302	PNPLA3	1,931686	0,012261882	up
agiseq45633	HIST1H2AB	1,6059184	0,012352411	up
agiseq17297	CAPN14	-4,0223285	0,012362895	down
agiseq38150	XLOC_l2_015202	-1,8838433	0,012362895	down
agiseq25326	HELLS	1,623924	0,012455689	up
agiseq28806	PLEKHH2	-1,6524267	0,012565454	down
agiseq11475	SLC7A11	1,6065776	0,01264017	up
agiseq4920	AOC3	-1,8400892	0,012693552	down
agiseq8575	HPR	-2,3374019	0,012693863	down
agiseq48387	WNT4	1,9196323	0,012730313	up
agiseq12928	FCRL1	-2,2050757	0,012941924	down
agiseq35321	ASPHD1	1,7751445	0,013040505	up
agiseq36107	NTF3	-1,8415875	0,013125005	down
agiseq13985	BST2	1,6211445	0,013137015	up
agiseq10064	PVT1	1,645323	0,013138236	up
agiseq43129	FGF13	-1,9437858	0,013166543	down
agiseq40791	ZBED2	2,4243927	0,013264654	up
agiseq25504	NR2F1	-1,8697751	0,013438211	down
agiseq37210	RNFT2	1,5814659	0,01345282	up
agiseq8286	AQP7P3	-1,79982	0,01348142	down
agiseq43285	MRGPRF	-1,5943431	0,013508686	down
agiseq32788	FMO5	-2,1337776	0,013551518	down
agiseq17158	ARHGAP11B	1,6523993	0,013562682	up
agiseq1554	LOC284939	1,6413099	0,013588946	up
agiseq48790	MFSD4	-1,7410031	0,013611247	down
agiseq37533	UCN2	2,1158366	0,013615256	up
agiseq44266	XLOC_l2_006745	-1,6092952	0,013699754	down
agiseq7311	HIST1H2AM	1,6091737	0,013741487	up
agiseq6240	SGOL2	2,0168273	0,013741487	up
agiseq24948	PIP5K1B	-1,753171	0,013741487	down

agiseq50203	CNN1	-1,6729679	0,013741487	down
agiseq42650	HIST1H3B	1,8159207	0,013956892	up
agiseq35403	LOC344887	1,7471418	0,013996119	up
agiseq37965	PROS1	-1,5830992	0,013996119	down
agiseq1050	FAM84B	-1,5871974	0,014057765	down
agiseq19192	NEBL	-1,6772456	0,014357367	down
agiseq25646	HIST1H2AI	1,8817605	0,014417003	up
agiseq16612	SLURP1	-2,8813712	0,014450184	down
agiseq6229	XLOC_014418	2,2435713	0,01448296	up
agiseq38035	TNNT1	2,4633423	0,014488071	up
agiseq46305	KCNN4	-1,7145609	0,014869358	down

miRNA	logFC	Adjusted p.value	Style
hsa-miR-19a-3p	1,908832	4,26E-05	up
hsa-miR-106b-5p	1,618497	0,000830632	up
hsa-miR-128	1,934518	0,000308303	up
hsa-miR-139-3p	-3,20149	0,002833198	down
hsa-miR-196a-5p	7,072646	0,001986314	up
hsa-miR-196b-5p	5,768127	0,001439454	up
hsa-miR-200c-5p	4,051838	0,002650818	up
hsa-miR-205-3p	4,557688	0,002302338	up
hsa-miR-205-5p	2,305174	0,000913514	up
hsa-miR-21-3p	2,321994	0,001718119	up
hsa-miR-21-5p	1,815095	0,000371239	up
hsa-miR-210	2,296032	0,001027121	up
hsa-miR-33a-5p	4,224728	0,002865761	up
hsa-miR-424-5p	2,224572	0,000511454	up
hsa-miR-431-3p	5,729294	0,001547111	up
hsa-miR-503-5p	4,167737	0,000860577	up
hsa-miR-513b	-2,12139	0,003086559	down
hsa-miR-590-5p	1,65858	0,000244598	up
hsa-miR-7-5p	2,707102	0,002989714	up
hsa-miR-718	-1,68728	0,00279287	down
hsa-miR-769-5p	2,819821	0,00261193	up
hsa-miR-93-5p	1,791531	0,001768023	up
hsa-miR-944	5,458575	0,002796976	up
hsa-miR-130b-3p	1,989327	0,003293201	up
hsa-miR-17-3p	1,88561	0,004477365	up
hsa-miR-181a-2-3p	3,445526	0,004171489	up
hsa-miR-215	3,788453	0,004418083	up
hsa-miR-301a-3p	4,453134	0,003888769	up
hsa-miR-4721	-1,81719	0,004170098	down
hsa-miR-204-5p	-5,54055	0,00526091	down
hsa-miR-375	-7,20094	0,005381405	down
hsa-miR-339-5p	2,72589	0,00567495	up
hsa-miR-18a-5p	3,991398	0,006798039	up
hsa-miR-194-5p	1,661484	0,00652265	up
hsa-miR-212-3p	3,810433	0,006581979	up
hsa-miR-5096	-2,62503	0,006448372	down
hsa-miR-708-5p	4,059324	0,006931402	up
hsa-miR-4687-3p	-1,79424	0,007091371	down
hsa-miR-4481	-3,75287	0,007641811	down
hsa-miR-455-5p	4,046855	0,007817536	up
hsa-miR-339-3p	3,409825	0,009206231	up
hsa-miR-502-5p	3,533769	0,009043619	up
hsa-miR-455-3p	1,720931	0,009721763	up
hsa-miR-486-5p	-1,62646	0,009717498	down

Probe	Gene symbol	logFC	Style	Adjusted p.value
agiseq12849	XLOC_002603	5,693994	up	0,001770624
pl094855	LINC00607	5,528881	up	4,50E-06
agiseq20765	XLOC_002603	5,013591	up	0,000758251
agiseq8196	XLOC_005008	4,902638	up	1,48E-06
agiseq35381	HOXA11-AS1	4,893287	up	0,000989502
agiseq1710	XLOC_l2_009441	4,56289	up	0,001757375
agiseq45616	XLOC_010146	4,520974	up	0,00076837
agiseq5953	LOC440905	4,448194	up	0,003664966
agiseq47200	XLOC_005008	4,407378	up	5,79E-06
agiseq29979	XLOC_002603	4,178697	up	0,000554935
agiseq47278	XLOC_007123	4,00814	up	0,004585166
pl028534	LINC00460	3,828377	up	0,002494688
agiseq27824	XLOC_l2_014697	3,672953	up	0,006619114
agiseq43456	XLOC_010988	3,658431	up	0,000199104
agiseq14381	XLOC_012848	3,644532	up	7,28E-05
agiseq43210	LINC00460	3,570941	up	0,005124504
pl025561	KC6	3,525055	up	0,005391725
agiseq43306	SNAR-F	3,517607	up	0,002868724
agiseq40515	XLOC_000587	3,496764	up	0,000603688
agiseq3206	LOC100507033	3,488628	up	0,001626026
agiseq26137	SNAR-G1	3,481488	up	0,002934733
pl017000	TEX26-AS1	3,434877	up	0,000452871
pl059021	ANKRD26P3	3,422558	up	0,008030578
agiseq18978	XLOC_l2_015789	3,4087	up	0,008033756
pl041645	LOC440910	3,406179	up	0,006300489
agiseq47455	SNAR-H	3,387677	up	0,001246563
agiseq12292	KC6	3,385726	up	0,000739046
agiseq26208	LOC100505938	3,359074	up	0,000186984
pl036731	LOC440905	3,345228	up	0,004899214
agiseq32193	LOC100506791	3,334076	up	0,000779318
agiseq16718	XLOC_009627	3,310886	up	0,001351593
agiseq3003	SNAR-G2	3,3088	up	0,001491055
agiseq1326	SNAR-A3	3,28766	up	0,000319266
agiseq18905	XLOC_012682	3,272442	up	0,001119214
agiseq3843	SNAR-D	3,269868	up	0,00076649
pl025478	LOC344887	3,268325	up	0,002029527
agiseq38615	LOC344887	3,263533	up	0,004943143
agiseq5332	LOC100653149	3,250223	up	0,00067161
agiseq24732	XLOC_001851	3,249587	up	0,002579831
agiseq25702	XLOC_012139	3,237418	up	0,006673784
agiseq44708	XLOC_010962	3,231676	up	9,97E-05
agiseq12071	LOC100507263	3,22836	up	0,006736306
agiseq24121	XLOC_l2_009469	3,228291	up	0,007665464
agiseq26692	XLOC_002962	3,212265	up	5,51E-05
agiseq457	HOXA11-AS1	3,18795	up	0,002684689
agiseq35553	XLOC_l2_010751	3,161348	up	0,000403694
agiseq31303	XLOC_013794	3,151161	up	0,007491643
agiseq49265	XLOC_009124	3,14488	up	9,20E-05
agiseq38463	XLOC_l2_010338	3,128452	up	0,001360048
agiseq22363	XLOC_004201	3,093471	up	0,007288206

agiseq1363	SNAR-B2	3,074516	up	0,00061535
agiseq37183	ANO1-AS2	3,048343	up	0,003760884
agiseq10290	XLOC_l2_007566	3,048099	up	6,45E-05
agiseq9399	LOC344887	3,007942	up	0,008198924
agiseq34882	XLOC_003364	2,988878	up	5,58E-05
agiseq28392	LOC100506303	2,960404	up	0,000868021
pl012626	KC6	2,957623	up	0,00118686
agiseq33351	XLOC_l2_013835	2,95466	up	0,001927893
pl021740	KC6	2,931138	up	0,00069773
agiseq39971	XLOC_000587	2,921848	up	0,003931117
agiseq34388	XLOC_001083	2,907865	up	2,82E-05
agiseq40196	LOC100287082	2,904061	up	0,004614883
agiseq30387	LOC386597	2,877801	up	9,34E-05
agiseq41847	XLOC_l2_009442	2,856987	up	0,008283818
agiseq42402	XLOC_001546	2,849698	up	0,002919098
pl090344	KC6	2,845957	up	0,003370305
agiseq42773	XLOC_008711	2,838809	up	0,001380458
agiseq37922	XLOC_l2_006021	2,835614	up	0,000517892
agiseq21389	KRT42P	2,825654	up	0,000506424
pl072017	LOC344887	2,81638	up	0,007069103
agiseq30209	XLOC_011550	2,801652	up	0,001623797
pl075831	LOC170425	2,785468	up	0,003634464
agiseq24369	LOC100652832	2,768777	up	0,001625913
agiseq23896	LOC100507412	2,766664	up	0,008951107
agiseq27967	XLOC_014219	2,757129	up	0,000278205
pl022444	KC6	2,754722	up	0,005883582
agiseq22693	XLOC_011548	2,746285	up	0,001853679
agiseq50119	XLOC_001826	2,746014	up	0,000261863
agiseq50439	DUSP5P	2,735609	up	0,002023201
pl113662	LINC00607	2,730268	up	0,002789023
agiseq37029	LOC283028	2,717894	up	0,00191125
agiseq36808	XLOC_003399	2,703613	up	0,00990684
agiseq29109	XLOC_007596	2,70161	up	0,000191354
agiseq19989	XLOC_007124	2,619296	up	0,004844677
agiseq20281	LOC100129297	2,614477	up	0,001072327
pl035442	KC6	2,612039	up	0,00017184
agiseq35770	LOC100505787	2,587907	up	0,001132887
agiseq19278	XLOC_l2_015821	2,585022	up	0,001096747
agiseq41387	XLOC_009788	2,572076	up	0,000163739
agiseq35925	XLOC_013451	2,551131	up	0,006063089
agiseq20739	XLOC_012848	2,49079	up	0,001720057
pl009879	KC6	2,487776	up	2,46E-05
pl043298	LINC00640	2,486562	up	0,004572103
agiseq25834	XLOC_002174	2,477403	up	0,001673787
agiseq20423	LOC100131354	2,468933	up	0,005141983
pl056298	KRT42P	2,467935	up	0,002298231
agiseq18395	LOC149351	2,462649	up	0,001368102
pl051869	LOC100505718	2,459293	up	0,001080789
pl037063	LOC100130673	2,449319	up	0,003098266
pl096373	TEX26-AS1	2,448995	up	0,000635086
agiseq30487	DKFZp434J0226	2,444406	up	0,002691472

agiseq46918	LOC100506027	2,442724	up	0,00315392
pl067924	LOC100287314	2,435867	up	0,009519421
pl066024	KC6	2,431736	up	0,00014418
agiseq32523	XLOC_003146	2,42717	up	2,77E-05
pl090465	LOC727982	2,40094	up	0,008155104
agiseq13522	XLOC_001851	2,391208	up	0,009446057
pl112000	LOC100505718	2,382951	up	0,00325178
agiseq32887	XLOC_l2_009442	2,375179	up	0,009402785
agiseq50373	LOC100505730	2,354158	up	5,78E-05
agiseq27185	LOC100653147	2,346212	up	0,006508297
agiseq48747	LOC100507474	2,344615	up	0,006687167
pl013248	LOC344887	2,338615	up	0,003444993
agiseq106	LOC339240	2,332833	up	0,006677832
pl045649	KC6	2,320601	up	0,002886374
agiseq48195	XLOC_009649	2,319338	up	0,002435959
agiseq23450	HOTAIR	2,312613	up	0,002392117
agiseq41025	XLOC_010390	2,307909	up	0,000953192
pl020501	KC6	2,290591	up	0,000656404
agiseq6124	LOC100506798	2,288389	up	0,005501179
agiseq50532	LOC728755	2,286671	up	0,000456214
pl072916	KC6	2,274449	up	0,000387902
pl071098	KC6	2,272362	up	0,002928445
agiseq11805	XLOC_003577	2,268754	up	0,006482165
agiseq41257	KRT42P	2,259336	up	0,005764245
pl115215	LINC00578	2,255595	up	0,009852738
agiseq40080	XLOC_013457	2,250714	up	0,000354539
agiseq12068	XLOC_l2_001134	2,237929	up	0,002401916
agiseq49407	XLOC_l2_004121	2,234398	up	0,009001374
agiseq8282	XLOC_l2_012678	2,233835	up	4,03E-05
pl043256	LOC253573	2,233513	up	0,004056995
agiseq41824	XLOC_007531	2,220451	up	0,003518385
pl105759	KC6	2,215188	up	0,001057159
agiseq26907	LOC100506534	2,208241	up	0,00091746
pl032457	LINC00340	2,195843	up	0,006316433
pl031779	KC6	2,195558	up	0,003790404
pl104745	KC6	2,188791	up	0,002107179
agiseq28498	XLOC_012977	2,186608	up	0,006398585
agiseq36318	XLOC_008922	2,184072	up	0,000497844
agiseq29707	XLOC_003071	2,165152	up	0,004093394
pl009157	KC6	2,15162	up	0,001851938
agiseq5541	XLOC_010390	2,150854	up	0,000142378
pl005999	KC6	2,133667	up	0,000866355
pl082438	KC6	2,133046	up	0,002639768
agiseq18468	XLOC_010390	2,127548	up	0,000284231
agiseq32338	XLOC_011549	2,126342	up	0,000735261
agiseq17697	XLOC_004046	2,116822	up	0,002749957
agiseq44294	LOC286467	2,110067	up	0,006548479
agiseq32711	LOC100506128	2,108245	up	0,000510553
agiseq41453	LOC100132240	2,107805	up	0,009274852
agiseq15407	XLOC_011728	2,093944	up	0,000740838
agiseq13383	MGC4294	2,066641	up	0,00617832

agiseq39587	XLOC_002967	2,063346	up	0,007779693
agiseq1775	XLOC_009378	2,058833	up	0,006711165
agiseq5109	XLOC_014399	2,047157	up	0,005630045
agiseq31577	XLOC_009110	2,042957	up	0,001704733
agiseq50297	LOC728196	2,00686	up	0,008925506
agiseq31988	LOC100652839	1,995852	up	0,001902766
pl022066	KC6	1,990381	up	0,000471569
agiseq14229	XLOC_l2_008313	1,98684	up	0,005348606
agiseq21303	XLOC_005935	1,985663	up	0,001323242
pl015288	LOC100506305	1,982502	up	0,006759684
agiseq18734	LOC100132774	1,976629	up	0,003821401
pl016525	KC6	1,976629	up	5,82E-05
pl080733	LOC100505918	1,971787	up	8,04E-05
agiseq1291	XLOC_002956	1,969828	up	0,00156
agiseq18431	XLOC_l2_009469	1,962935	up	0,009471265
agiseq17219	XLOC_004273	1,955834	up	0,002546236
agiseq35204	XLOC_l2_009301	1,945884	up	0,003136828
agiseq7901	XLOC_012605	1,942574	up	0,008449747
pl019734	KC6	1,935828	up	0,00264469
pl043005	KC6	1,923653	up	0,001411541
agiseq10526	LOC100506285	1,919026	up	0,00449395
agiseq23707	XLOC_l2_009441	1,908892	up	0,004090026
agiseq2555	XLOC_l2_011983	1,892863	up	0,008092783
agiseq40744	XLOC_l2_012159	1,888437	up	0,007055775
agiseq37429	LOC100507460	1,886847	up	0,003062511
agiseq18591	P39194	1,886582	up	0,005439728
pl053387	KC6	1,886258	up	0,005083245
agiseq5550	XLOC_l2_005916	1,885622	up	0,008045653
agiseq50067	LOC400655	1,883215	up	0,009800722
agiseq18564	XLOC_008237	1,879505	up	0,002305456
agiseq3031	LOC646627	1,875398	up	0,007213307
agiseq44945	XLOC_001757	1,849734	up	0,002479998
agiseq32567	LOC100129223	1,846206	up	0,000376136
agiseq16530	XLOC_011331	1,845349	up	0,000135488
agiseq47380	XLOC_008986	1,843438	up	0,004204411
pl030940	LOC100506305	1,829997	up	0,002277627
agiseq36454	XLOC_l2_012678	1,817499	up	0,005775649
agiseq10592	XLOC_001241	1,800206	up	0,006764522
agiseq21266	XLOC_003616	1,795138	up	0,007799576
agiseq47310	XLOC_l2_012871	1,789794	up	0,008293616
agiseq30288	LOC100216001	1,789287	up	0,001542073
pl064109	LINC00340	1,787149	up	0,000696083
pl002919	LOC100506305	1,783546	up	0,005131793
agiseq29755	XLOC_003986	1,781789	up	0,001774518
agiseq37387	LOC100507460	1,772774	up	0,000790924
agiseq17315	ALOX12P2	1,771678	up	0,00910347
pl044470	LOC253573	1,771537	up	0,000851399
agiseq5385	IL8	1,766261	up	0,009515083
agiseq50317	LOC644919	1,763513	up	0,004681189
agiseq50045	XLOC_l2_014697	1,762441	up	0,007991815
pl002725	LOC100506305	1,762148	up	0,000957511

agiseq1858	XLOC_005935	1,758209	up	0,000418774
agiseq45661	LOC100507240	1,75657	up	0,007399359
agiseq48457	TCAM1P	1,755634	up	0,001303981
pl109890	LINC00645	1,751211	up	0,001081408
agiseq17326	XLOC_l2_009182	1,748116	up	0,005739505
agiseq1471	XLOC_l2_015034	1,744052	up	0,002691798
agiseq435	LOC100506305	1,739865	up	0,005307449
agiseq46080	LOC100631378	1,738209	up	0,007809565
agiseq38190	XLOC_001426	1,730847	up	0,000243031
agiseq24885	LOC100505918	1,726292	up	0,005919533
agiseq21816	XLOC_008108	1,724593	up	0,00477744
pl039180	FLJ42875	1,720792	up	0,007856858
agiseq9449	FLJ30838	1,72036	up	0,002690765
agiseq20419	LOC150005	1,705492	up	0,004584907
pl000366	KC6	1,700063	up	0,004098578
agiseq21225	LOC100509205	1,697925	up	0,000255517
agiseq43458	C6orf147	1,695331	up	0,000822052
agiseq42047	XLOC_l2_000297	1,689496	up	0,001415945
agiseq21764	TCAM1P	1,677402	up	0,002105338
agiseq31890	AKR1CL1	1,670913	up	0,002223091
agiseq1096	XLOC_l2_010661	1,670236	up	0,006933748
agiseq9448	C14orf33	1,668436	up	0,008709001
agiseq36974	HOTAIR	1,6667	up	0,00987087
agiseq13137	LOC100505718	1,664475	up	0,001568794
agiseq50399	LOC100216001	1,657503	up	0,002289994
agiseq21193	GBP1P1	1,654145	up	0,001915652
agiseq13008	LOC440040	1,643395	up	0,008619785
agiseq15064	LOC100506660	1,64099	up	0,004573016
agiseq36861	XLOC_010828	1,640358	up	0,007261608
pl033371	KC6	1,635619	up	0,00287373
agiseq6004	XLOC_014255	1,62849	up	0,001490353
pl084893	GBP1P1	1,62323	up	0,004656625
agiseq14981	LOC646903	1,622079	up	0,001396219
agiseq41313	XLOC_012799	1,619855	up	0,009605203
agiseq41658	FLJ32224	1,613506	up	0,004006572
agiseq8227	XLOC_l2_007783	1,613217	up	0,000147333
agiseq27527	LOC100506714	1,61119	up	0,004470689
agiseq17111	MGC16121	1,608709	up	0,000611247
pl089731	LOC253573	1,608686	up	7,58E-05
agiseq36471	XLOC_010813	1,598814	up	0,000417337
agiseq28340	XLOC_l2_009441	1,598183	up	0,000255778
agiseq24066	LOC100507144	1,593155	up	0,002880743
agiseq33500	XLOC_004707	1,584958	up	0,000382862
agiseq41248	LOC100505729	1,582634	up	0,005992803
agiseq12929	LOC100507311	-1,58227	down	0,003944177
agiseq7936	LOC100506207	-1,58378	down	0,007684897
agiseq32812	LOC651536	-1,58496	down	0,008372556
agiseq20830	Q6TXI9	-1,58588	down	0,002601219
agiseq34769	XLOC_007210	-1,58901	down	0,004822552
pl055598	TXLNG2P	-1,59105	down	0,005026655
agiseq33526	XLOC_006043	-1,59581	down	0,00124218

agiseq29555	LINC00472	-1,6	down	0,007488697
agiseq5350	LOC100506123	-1,60324	down	0,008494974
pl046795	CMAHP	-1,60349	down	0,00041735
pl010303	CMAHP	-1,60975	down	0,001435326
agiseq8541	XLOC_011620	-1,61165	down	0,007923561
pl009572	ADAMTS9-AS2	-1,61536	down	0,005073328
agiseq41500	XLOC_l2_008991	-1,61716	down	0,000401001
pl018743	LINC00478	-1,61974	down	0,006578751
pl000401	LINC00571	-1,62161	down	0,00068102
agiseq25556	XLOC_011815	-1,62253	down	0,007782731
pl054232	LINC00571	-1,62497	down	0,002691907
agiseq50660	SNORD113-1	-1,62692	down	0,003566828
agiseq19194	SNORD114-5	-1,63051	down	0,006313088
agiseq3230	XLOC_011585	-1,63142	down	0,001277017
pl091059	CYP4F24P	-1,6339	down	0,001437323
agiseq45926	CYP4Z2P	-1,63884	down	0,008967733
agiseq16775	XLOC_011104	-1,63886	down	0,003571789
agiseq42087	XLOC_010929	-1,63901	down	0,008860046
agiseq25306	LINC00478	-1,63911	down	0,007483442
pl010556	LOC400456	-1,63946	down	0,008145674
agiseq49196	XLOC_005540	-1,6413	down	0,003200846
agiseq35642	LOC100652963	-1,64182	down	0,004830574
agiseq47805	XLOC_002066	-1,64443	down	0,000970806
agiseq13546	XLOC_l2_003419	-1,64715	down	0,004846441
agiseq30374	LOC400550	-1,65585	down	0,004415574
agiseq25962	MAGI2-AS3	-1,65653	down	0,008115074
agiseq20243	SNORD116-12	-1,65874	down	0,00099564
agiseq2068	SNORD64	-1,65904	down	0,000914431
agiseq10790	LOC100505976	-1,66537	down	0,000561364
agiseq30499	LOC400550	-1,67149	down	0,004591542
agiseq25160	IPW	-1,67371	down	0,001240435
pl070933	LINC00473	-1,67372	down	0,006030407
agiseq44743	LOC100506673	-1,67392	down	0,000567919
agiseq972	TTTY15	-1,68217	down	0,00212727
agiseq32175	SNORD116-19	-1,68468	down	5,98E-05
agiseq6217	XLOC_014508	-1,68536	down	0,004470653
agiseq48690	LOC100128252	-1,6879	down	0,003065657
agiseq15231	ZNF503-AS1	-1,69079	down	0,002315332
agiseq7433	HSD52	-1,69175	down	0,003446095
pl022200	ANP32AP1	-1,69185	down	6,04E-05
agiseq5770	XLOC_001035	-1,69636	down	0,001374705
pl058074	LINC00710	-1,69875	down	0,001653836
agiseq36891	XLOC_l2_015206	-1,71781	down	0,000110088
agiseq1556	XLOC_010455	-1,72147	down	0,006726464
agiseq44283	LOC100507309	-1,7218	down	0,004049658
agiseq4994	SNORD112	-1,7222	down	0,003966232
agiseq33536	XLOC_001876	-1,73026	down	0,000784139
agiseq34707	SNORD114-3	-1,73452	down	0,005976976
pl029020	MAGI2-AS3	-1,74386	down	0,00512694
agiseq19940	A2MP1	-1,74745	down	4,22E-05
pl034722	LINC00472	-1,75343	down	0,005519145

agiseq20396	SNORD113-9	-1,75425	down	0,004453598
pl014785	IPW	-1,75738	down	0,001004123
agiseq9456	MAGI2-AS3	-1,75804	down	0,007818276
agiseq15680	XLOC_000375	-1,76112	down	0,005060818
agiseq14302	XLOC_008001	-1,76722	down	0,000566677
agiseq25188	SNORD107	-1,76799	down	0,000112494
agiseq32951	LOC100506965	-1,77395	down	0,000586717
agiseq26914	MAGI2-AS3	-1,77739	down	0,00948408
agiseq32177	XLOC_l2_009136	-1,78344	down	0,00261783
pl058314	PGM5P2	-1,78605	down	4,66E-05
agiseq43703	FAM66E	-1,79007	down	9,98E-05
agiseq39778	Q8NDX4	-1,79057	down	0,003203738
agiseq17331	LOC100506948	-1,79186	down	0,000979687
agiseq12036	XLOC_011183	-1,79417	down	0,000389871
agiseq21974	LOC100506965	-1,79421	down	0,001044916
agiseq35356	LOC100507226	-1,79522	down	0,004126808
agiseq15482	ZNF300P1	-1,79955	down	0,004398231
agiseq50300	MAGI2-AS3	-1,8073	down	0,00354433
agiseq21676	LINC00478	-1,80777	down	0,003411072
agiseq12641	LOC100507165	-1,80929	down	0,000316388
agiseq34387	TTTY10	-1,81162	down	0,00334569
pl115229	LINC00571	-1,81392	down	0,002823882
agiseq13308	XLOC_003475	-1,81428	down	0,004538337
pl042364	LINC00571	-1,81518	down	0,002560654
agiseq15392	SNORD116-11	-1,81628	down	0,000342466
pl031406	LINC00478	-1,82446	down	7,59E-05
agiseq8614	XLOC_009813	-1,83026	down	0,000665358
pl034709	LINC00571	-1,85712	down	0,00012463
agiseq37100	LOC100292922	-1,87312	down	0,002749128
agiseq21569	LOC284244	-1,87898	down	0,001025151
agiseq5077	XLOC_006043	-1,88786	down	0,001380674
agiseq18914	XLOC_l2_009131	-1,89325	down	0,004496344
agiseq24489	XLOC_l2_014802	-1,89755	down	0,002312391
agiseq21437	SNORD114-13	-1,91426	down	0,005257023
agiseq37399	XLOC_006726	-1,91882	down	0,00602798
agiseq38229	AQP7P1	-1,92464	down	0,00615858
agiseq36141	XLOC_005918	-1,9258	down	0,003791887
agiseq22122	ZNF300P1	-1,92621	down	0,0039139
agiseq4817	XLOC_001558	-1,92716	down	0,004234653
agiseq36207	SNORD116-6	-1,93071	down	1,18E-05
agiseq19982	XLOC_006350	-1,93266	down	0,003334973
pl074003	AQP7P1	-1,93985	down	0,005117919
agiseq1872	LOC572558	-1,94138	down	0,001295099
agiseq27515	LOC145820	-1,9482	down	0,007563728
pl095722	LOC728606	-1,95379	down	0,006017054
agiseq12098	XLOC_011183	-1,95643	down	0,001129126
pl097153	LINC00472	-1,9591	down	0,000111001
agiseq13792	C10orf112	-1,96584	down	0,001057009
agiseq50303	LOC644192	-1,97279	down	0,000588167
agiseq8727	XLOC_005365	-1,97507	down	0,005537793
agiseq45883	LOC285419	-1,9768	down	0,00016528

agiseq10191	XLOC_007038	-1,97736	down	0,000830844
agiseq27140	SNORD116-4	-1,98653	down	1,46E-05
agiseq23480	XLOC_l2_012605	-1,98758	down	0,005589276
agiseq24385	LINC00472	-1,98969	down	0,002561606
pl103824	LOC400456	-1,99843	down	0,000288174
agiseq40281	XLOC_003915	-2,00477	down	0,003410157
agiseq8889	LOC100131825	-2,0132	down	0,000515238
agiseq20945	XLOC_l2_010636	-2,01974	down	0,007720898
agiseq19390	XLOC_l2_010636	-2,02214	down	0,008356015
agiseq47195	XLOC_000281	-2,02381	down	0,003349938
pl030437	LINC00330	-2,03006	down	0,001165583
agiseq5750	XIST	-2,03467	down	5,13E-05
pl076360	LOC400456	-2,04454	down	0,000863794
agiseq38345	CYP4Z2P	-2,04584	down	0,000424747
pl063697	LOC285419	-2,04612	down	0,000173809
agiseq27724	XLOC_006938	-2,05259	down	0,002522182
agiseq2865	GGTA1P	-2,05609	down	0,004472698
agiseq5008	XLOC_l2_008140	-2,06032	down	0,001512322
agiseq11468	SNORD115-32	-2,06864	down	0,006999316
agiseq26812	LOC285419	-2,07115	down	0,000278907
agiseq41327	XLOC_005764	-2,07326	down	0,007773803
agiseq194	LOC400456	-2,08294	down	0,001369883
agiseq47638	XLOC_010434	-2,08607	down	0,003920041
agiseq788	XLOC_008394	-2,08763	down	0,004024205
agiseq20226	SDIM1	-2,09263	down	0,007570372
agiseq14482	SNORD115-23	-2,09761	down	0,003249051
pl067392	GGTA1P	-2,09844	down	0,003552428
agiseq15933	XLOC_009021	-2,1043	down	0,001490531
pl099343	LINC00472	-2,10951	down	0,005317343
agiseq29	SNORD114-30	-2,11929	down	0,001732524
agiseq32500	LOC100509780	-2,13893	down	0,001339331
agiseq37899	SNORD113-2	-2,14648	down	0,002612161
agiseq4525	LOC100128252	-2,15523	down	0,001063771
agiseq7641	LOC284578	-2,159	down	0,001072684
agiseq25903	XLOC_002344	-2,16743	down	0,001347007
pl013232	LINC00571	-2,20142	down	0,00628719
agiseq4516	LOC100130232	-2,20702	down	0,002796724
agiseq18600	FLJ38379	-2,21446	down	0,00080724
agiseq14095	LOC100507632	-2,22171	down	0,001905829
agiseq41214	ZNF503-AS1	-2,26178	down	0,000179041
agiseq15837	XLOC_000983	-2,27775	down	0,008403473
agiseq6699	XLOC_003787	-2,28191	down	0,002188679
agiseq36423	SNORD114-17	-2,28732	down	0,003879122
agiseq6944	XLOC_010172	-2,30281	down	0,00151601
agiseq10925	LOC440925	-2,31631	down	0,000534269
agiseq49684	psiTPTE22	-2,32344	down	0,006814243
agiseq28805	LINC00473	-2,32589	down	0,002289763
pl061116	LINC00478	-2,33179	down	0,000812873
agiseq16629	IPW	-2,35744	down	3,45E-05
agiseq11684	XLOC_005764	-2,35772	down	0,006656196
agiseq40354	SNORD115-3	-2,41422	down	0,002805841

agiseq44414	AQP7P1	-2,44944	down	0,00653753
agiseq49670	XLOC_l2_008991	-2,45103	down	0,000178025
agiseq31211	XLOC_007433	-2,45585	down	0,002276172
agiseq46088	FLJ42875	-2,45861	down	0,001172761
agiseq2916	XLOC_003595	-2,47634	down	0,003214373
agiseq43357	XIST	-2,48616	down	0,0006712
agiseq30188	XLOC_009813	-2,49335	down	0,00037695
agiseq48665	XLOC_007235	-2,50158	down	0,00466752
agiseq10731	LOC728606	-2,50196	down	0,008666038
agiseq41859	LOC400084	-2,55664	down	0,002240915
pl111850	MCF2L-AS1	-2,56625	down	0,00899801
agiseq2473	XLOC_011294	-2,57575	down	0,004971625
pl106428	LOC400456	-2,58262	down	0,000276098
agiseq21758	LOC284191	-2,5979	down	0,006848632
agiseq38298	XLOC_006726	-2,61881	down	0,000890145
pl066999	LOC400084	-2,63849	down	0,00416917
agiseq8467	XLOC_l2_015101	-2,63889	down	0,00573112
agiseq24568	XLOC_l2_007986	-2,64457	down	0,000139121
agiseq5914	XLOC_l2_015800	-2,67701	down	0,009120809
agiseq25049	XLOC_003223	-2,67787	down	0,004230908
agiseq7960	XLOC_l2_008976	-2,70073	down	5,50E-05
agiseq9638	FLJ42875	-2,70082	down	0,000680928
agiseq42086	XLOC_009813	-2,70919	down	0,001249566
agiseq14865	SNORD115-1	-2,71875	down	0,00039431
agiseq9521	XLOC_003595	-2,75678	down	0,000465985
agiseq17794	SNORD115-2	-2,7681	down	0,002998027
pl089497	LOC145820	-2,81911	down	0,004506106
agiseq35130	XLOC_009437	-2,84384	down	0,005116094
agiseq5606	XLOC_l2_013031	-2,84622	down	0,000144351
agiseq6675	SNORD115-4	-2,86914	down	0,000762155
agiseq8278	LOC100124692	-2,89185	down	0,004426055
agiseq2153	LOC284276	-2,89828	down	0,001490447
pl034698	LOC339524	-2,90655	down	6,22E-05
agiseq819	LOC339524	-2,91181	down	4,96E-05
agiseq41723	XLOC_008395	-2,92821	down	0,002211893
agiseq96	XLOC_011592	-2,94587	down	0,000700229
agiseq15705	FLJ37644	-2,9639	down	0,007258634
agiseq34175	SNORD115-5	-2,966	down	0,001333203
agiseq44047	XLOC_l2_009658	-3,00931	down	0,000441974
agiseq49448	SNORD115-2	-3,04095	down	0,000797961
pl058845	LOC284578	-3,05341	down	2,77E-05
agiseq44421	FLJ42875	-3,07037	down	0,00037507
agiseq39408	LOC157503	-3,10293	down	0,004237761
agiseq45999	LOC100507008	-3,2332	down	0,001635617
agiseq48536	XLOC_012112	-3,28345	down	0,001200662
agiseq1852	LOC285141	-3,35047	down	0,004132641
agiseq27113	PP14571	-3,36762	down	0,009696601
agiseq9068	LOC100653221	-3,38932	down	0,006738935
agiseq22589	EMX2OS	-3,54563	down	0,009727653
agiseq13599	NBLA00301	-3,60377	down	0,000254416
agiseq25581	LOC100652774	-3,6424	down	0,002658516

agiseq4014	LOC400128	-3,71675	down	0,007170523
agiseq24248	XLOC_007734	-3,84915	down	0,000147844
agiseq14552	XLOC_004423	-3,85998	down	9,39E-05
agiseq19655	XLOC_009713	-3,99564	down	0,008315878
agiseq42498	LINC00261	-4,22037	down	0,003123435
agiseq535	LOC728052	-4,27704	down	0,000144612
agiseq17864	LOC100289255	-4,63284	down	0,000372146
agiseq1934	XLOC_012564	-4,73146	down	0,000724625
agiseq28817	XLOC_l2_002952	-6,59613	down	0,00186513

Co-expressed pairs		Symbol	Type	Style	Degree
A2MP1	PGM5	KNSTRN	gene	up	7
ANP32AP1	ASF1B	NKX3-1	gene	down	7
ANP32AP1	MMP11	AKAP12	gene	down	7
ANP32AP1	PRR11	C6orf58	gene	down	6
AQP7P1	AQP7P3	TRIP13	gene	up	5
C14orf33	KTN1-AS1	SPDEF	gene	down	5
CMAHP	CRABP1	PRB3	gene	down	5
CMAHP	IL6ST	CKS1B	gene	up	5
CMAHP	PTGIS	COL14A1	gene	down	5
CMAHP	ROR1	PRKAR2B	gene	down	5
CYP4Z2P	KIF20B	ZBTB20	gene	down	5
CYP4Z2P	MKI67	RECK	gene	down	5
CYP4Z2P	MLPH	PI16	gene	down	5
CYP4Z2P	SGOL1	PCM1	gene	down	5
CYP4Z2P	SHCBP1	SGOL1	gene	up	5
CYP4Z2P	TTYH1	PRB1	gene	down	4
EMX2OS	LAMA2	ADARB2	gene	down	4
FAM66E	C7	TRIB3	gene	up	4
FAM66E	SOD3	CFH	gene	down	4
FAM66E	ZIC5	CGNL1	gene	down	4
FLJ37644	STAC2	BPIFB2	gene	down	4
FLJ38379	ATP8A1	SELENBP1	gene	down	4
FLJ38379	ZMAT1	RIMS4	gene	down	4
FLJ42875	ACOX2	PRDM16	gene	down	4
FLJ42875	AKAP12	OGN	gene	down	4
FLJ42875	AMY1C	MGP	gene	down	4
FLJ42875	ATP1A2	BOC	gene	down	4
FLJ42875	BOC	SOD3	gene	down	4
FLJ42875	CYBRD1	TTYH1	gene	down	4
FLJ42875	EBF3	ROR1	gene	down	4
FLJ42875	FAM229B	RPL39L	gene	up	3
FLJ42875	GDF10	FZD4	gene	down	3
FLJ42875	MGP	FAM89A	gene	up	3
FLJ42875	MYH11	SLC12A2	gene	down	3
FLJ42875	MYRIP	PRR4	gene	down	3
FLJ42875	NR2F2	FOLR1	gene	down	3
FLJ42875	NTRK3	ENTPD8	gene	down	3
FLJ42875	OGN	AQP5	gene	down	3
FLJ42875	PCM1	CDCA3	gene	up	3
FLJ42875	PI16	CFHR3	gene	down	3
FLJ42875	PLAC9	ENO2	gene	up	3
FLJ42875	PRDM16	ACTL6A	gene	up	3
FLJ42875	RAB9B	RCAN2	gene	down	3
FLJ42875	RECK	JAM2	gene	down	3
FLJ42875	RIMS4	CLEC3B	gene	down	3
FLJ42875	RUNDC3B	RHOJ	gene	down	3
FLJ42875	ZBTB20	TNXB	gene	down	3
FLJ42875	ZC3H12B	PTPRN2	gene	down	3
FLJ42875	ZMAT1	XLOC_006	gene	up	3
GGTA1P	PRKAR2B	ZC3H12B	gene	down	3

HOTAIR	C1QL1	RAB9B	gene	down	3
HOTAIR	XLOC_006200	NTRK3	gene	down	3
IPW	GPRASP1	NR2F2	gene	down	3
IPW	OGN	CYBRD1	gene	down	3
IPW	ZNF415	AMY1C	gene	down	3
IPW	ZNF540	ZMAT1	gene	down	3
KC6	RFC4	C7	gene	down	3
KC6	RTP4	SHCBP1	gene	up	3
KRT42P	KRT17	MLPH	gene	down	3
KRT42P	ZBTB16	MKI67	gene	up	3
LINC00261	C6orf58	ASF1B	gene	up	3
LINC00261	TTYH1	PGM5	gene	down	3
LINC00460	CAMK2N2	DEPDC1	gene	up	2
LINC00472	SPATA6	FAM72D	gene	up	2
LINC00478	VIT	PIP	gene	down	2
LINC00571	ENPP4	ME3	gene	down	2
LINC00571	FAM107A	CYP1B1-AS	gene	down	2
LINC00571	NBEA	CAPN6	gene	down	2
LINC00571	NTRK3	MMP1	gene	up	2
LINC00571	PTPRN2	LOC72946	gene	down	2
LINC00571	RECQL4	ABI3BP	gene	down	2
LINC00571	RNASE4	ABCA6	gene	down	2
LINC00571	SELENBP1	C7orf41	gene	down	2
LINC00571	SORBS2	LRRC4C	gene	down	2
LINC00571	TONSL	GPX3	gene	down	2
LINC00710	IL17D	MFSD6L	gene	down	2
LINC00710	LRRN4CL	AZGP1	gene	down	2
LINC00710	RIMS4	MICAL3	gene	up	2
LINC00710	TNXB	INMT	gene	down	2
LOC100124692	BPIFB2	ATOH8	gene	down	2
LOC100124692	NKX3-1	AOX1	gene	down	2
LOC100128252	AR	ERBB4	gene	down	2
LOC100128252	BOC	C16orf74	gene	up	2
LOC100128252	CGNL1	DCLK1	gene	down	2
LOC100128252	FAM229B	C17orf53	gene	up	2
LOC100128252	FRMD3	PLK1	gene	up	2
LOC100128252	GUCA2B	FSCN1	gene	up	2
LOC100128252	LDOC1	CDC20	gene	up	2
LOC100128252	MGP	CCNB1	gene	up	2
LOC100128252	MSRA	SOX10	gene	down	2
LOC100128252	PCM1	POLQ	gene	up	2
LOC100128252	PRDM16	E2F1	gene	up	2
LOC100128252	PRKAR2B	UPI000007	gene	down	2
LOC100128252	RGN	ITM2A	gene	down	2
LOC100128252	RHOJ	CCL14	gene	down	2
LOC100128252	RNF180	ANKRD36	gene	down	2
LOC100128252	SELENBP1	TGFBR2	gene	down	2
LOC100128252	SOBP	CXCL12	gene	down	2
LOC100128252	ZBTB20	PDE2A	gene	down	2
LOC100128252	ZMAT1	MUSTN1	gene	down	2
LOC100128252	ZNF415	MMRN1	gene	down	2

LOC100131825	AQP1	F10	gene	down	2
LOC100131825	CFH	AQP1	gene	down	2
LOC100131825	CLEC3B	SOBP	gene	down	2
LOC100131825	COL14A1	GUCA2B	gene	down	2
LOC100131825	F10	FRMD3	gene	down	2
LOC100131825	JAM2	AR	gene	down	2
LOC100131825	MMRN1	IL17D	gene	down	2
LOC100131825	MUSTN1	RNASE4	gene	down	2
LOC100131825	PDE2A	FAM107A	gene	down	2
LOC100131825	RCAN2	VIT	gene	down	2
LOC100131825	SHE	KRT17	gene	up	2
LOC100131825	SOD3	ZNF415	gene	down	2
LOC100132774	ERVMER34-1	C1QL1	gene	up	2
LOC100505730	NCAPH2	RUNDC3B	gene	down	2
LOC100505918	CKS1B	PLAC9	gene	down	2
LOC100505918	PI16	MYRIP	gene	down	2
LOC100505918	PTPRN2	GDF10	gene	down	2
LOC100505918	SELENBP1	FAM229B	gene	down	2
LOC100505938	MGP	ACOX2	gene	down	2
LOC100505976	AQP1	STAC2	gene	down	2
LOC100505976	COL14A1	KIF20B	gene	up	2
LOC100505976	CPE	IL6ST	gene	down	2
LOC100505976	CXCL12	HOXA2	gene	down	1
LOC100505976	DARC	DLG2	gene	down	1
LOC100505976	DHH	BID	gene	up	1
LOC100505976	FBLN5	ACACB	gene	down	1
LOC100505976	JAM2	RACGAP1	gene	up	1
LOC100505976	SLIT3	HMMR	gene	up	1
LOC100505976	SSUH2	HIST1H2BF	gene	up	1
LOC100505976	TGFBR2	DIAPH3	gene	up	1
LOC100506027	ADAMTS2	CENPE	gene	up	1
LOC100506027	COL1A1	CDKN3	gene	up	1
LOC100506027	COL3A1	CDCA2	gene	up	1
LOC100506027	COL5A1	CCNA2	gene	up	1
LOC100506027	COL5A2	CACNB4	gene	down	1
LOC100506123	ANKRD36	BUB1B	gene	up	1
LOC100506128	ACTL6A	ATP2A3	gene	down	1
LOC100506128	ECT2	GFRA1	gene	down	1
LOC100506303	CKS1B	TPX2	gene	up	1
LOC100506303	ENO2	SMC4	gene	up	1
LOC100506303	KNSTRN	OIP5	gene	up	1
LOC100506303	SKP2	KIF2C	gene	up	1
LOC100506303	TRIB3	KIF23	gene	up	1
LOC100506660	CBX8	KIF14	gene	up	1
LOC100506673	FAM107A	FANCI	gene	up	1
LOC100506673	MAP2	CHEK1	gene	up	1
LOC100506673	MYRIP	CDCA8	gene	up	1
LOC100506673	NTRK3	ASPA	gene	down	1
LOC100506673	ZBTB20	NOVA1	gene	down	1
LOC100506791	APOD	GALNT16	gene	down	1
LOC100506791	ZSCAN18	ABCA8	gene	down	1

LOC100507033	POTEM	PPAPDC1A	gene	up	1
LOC100507165	CCL14	GPRIN1	gene	up	1
LOC100507165	CFH	TFF3	gene	down	1
LOC100507165	CFHR3	KIAA1324	gene	down	1
LOC100507165	IL6ST	CLDN10	gene	down	1
LOC100507165	ITM2A	SOX8	gene	down	1
LOC100507165	PODN	LMOD1	gene	down	1
LOC100507165	RECK	NUP62CL	gene	up	1
LOC100507165	ROR1	HSD17B6	gene	up	1
LOC100507226	UPI00000726DE	MAD2L1	gene	up	1
LOC100507309	AURKA	C11orf82	gene	up	1
LOC100507309	E2F1	TENC1	gene	down	1
LOC100507309	GINS2	KBTBD11	gene	down	1
LOC100507309	HJURP	ZG16B	gene	down	1
LOC100507309	KIF11	PPP1R1B	gene	down	1
LOC100507309	MCM5	TMEM125	gene	down	1
LOC100507309	MKI67	SVOPL	gene	down	1
LOC100507309	MTFR2	SCARA5	gene	down	1
LOC100507309	PNPLA7	MSMB	gene	down	1
LOC100507309	POLQ	MYO5C	gene	down	1
LOC100507309	RMI2	LEPREL1	gene	up	1
LOC100507309	SGOL1	CTHRC1	gene	up	1
LOC100507309	SOX10	FAIM2	gene	down	1
LOC100507460	KNSTRN	MFAP4	gene	down	1
LOC100507474	KNSTRN	PLAC8	gene	down	1
LOC100507632	STEAP4	SLC7A5	gene	up	1
LOC100509780	ID4	DNM3	gene	down	1
LOC100652832	CCNB1	CD302	gene	down	1
LOC100652832	CDC20	EBF1	gene	down	1
LOC100652832	FRZB	BMX	gene	down	1
LOC100652832	FSCN1	PPAP2B	gene	down	1
LOC100652832	PLK1	P2RY14	gene	down	1
LOC100652839	FSCN1	ANGPTL1	gene	down	1
LOC100653147	ENO2	SPC24	gene	up	1
LOC100653147	TRIB3	TDRD6	gene	down	1
LOC100653149	C17orf53	SLC7A2	gene	down	1
LOC100653149	KNSTRN	PRUNE2	gene	down	1
LOC100653149	TRIB3	TCEAL2	gene	down	1
LOC100653221	ART4	IL1RAP	gene	up	1
LOC100653221	KRT4	CHTF18	gene	up	1
LOC100653221	MUC21	SYNPO2	gene	down	1
LOC145820	DCLK1	FGF7	gene	down	1
LOC283028	C16orf74	AFF3	gene	down	1
LOC283028	CDCA3	PRH2	gene	down	1
LOC284244	SELENBP1	PRB4	gene	down	1
LOC284578	ASF1B	LAMC2	gene	up	1
LOC284578	CENPL	SMAD9	gene	down	1
LOC284578	E2F1	NPDC1	gene	down	1
LOC284578	ERBB4	GAL	gene	up	1
LOC284578	FMO5	FMO5	gene	down	1
LOC285141	GAL	CENPL	gene	up	1

LOC285141	NPDC1	MUC21	gene	down	1
LOC285141	SMAD9	KRT4	gene	down	1
LOC285419	LAMC2	ART4	gene	down	1
LOC339240	AKAP12	FRZB	gene	down	1
LOC339524	AKAP12	ID4	gene	down	1
LOC339524	AOX1	STEAP4	gene	down	1
LOC339524	ATOH8	RMI2	gene	up	1
LOC339524	INMT	PNPLA7	gene	down	1
LOC339524	MMRN1	MTFR2	gene	up	1
LOC339524	TGFBR2	MCM5	gene	up	1
LOC344887	MICAL3	KIF11	gene	up	1
LOC344887	RHOJ	HJURP	gene	up	1
LOC400128	ADARB2	GINS2	gene	up	1
LOC400128	AQP5	AURKA	gene	up	1
LOC400128	AZGP1	PODN	gene	down	1
LOC400128	BPIFB2	POTEM	gene	up	1
LOC400128	C6orf58	ZSCAN18	gene	down	1
LOC400128	ENTPD8	APOD	gene	down	1
LOC400128	ERBB4	MAP2	gene	down	1
LOC400128	FOLR1	CBX8	gene	up	1
LOC400128	MFSD6L	SKP2	gene	up	1
LOC400128	MLPH	ECT2	gene	up	1
LOC400128	NKX3-1	COL5A2	gene	up	1
LOC400128	PRB1	COL5A1	gene	up	1
LOC400128	PRB3	COL3A1	gene	up	1
LOC400128	PRB4	COL1A1	gene	up	1
LOC400128	PRH2	ADAMTS2	gene	up	1
LOC400128	PRR4	SSUH2	gene	down	1
LOC400128	SLC12A2	SLIT3	gene	down	1
LOC400128	SPDEF	FBLN5	gene	down	1
LOC400456	AFF3	DHH	gene	down	1
LOC400456	CLEC3B	DARC	gene	down	1
LOC400456	COL14A1	CPE	gene	down	1
LOC400456	CXCL12	NCAPH2	gene	up	1
LOC400456	DCLK1	ERVMER34	gene	up	1
LOC400456	F10	SHE	gene	down	1
LOC400456	GPX3	RNF180	gene	down	1
LOC400456	JAM2	RGN	gene	down	1
LOC400456	MUSTN1	MSRA	gene	down	1
LOC400456	RCAN2	LDOC1	gene	down	1
LOC400550	FGF7	LRRN4CL	gene	down	1
LOC400550	SYNPO2	TONSL	gene	up	1
LOC440905	CHTF18	SORBS2	gene	down	1
LOC644192	AKAP12	RECQL4	gene	up	1
LOC644192	FAM89A	NBEA	gene	down	1
LOC644192	NR2F2	ENPP4	gene	down	1
LOC644192	PCM1	SPATA6	gene	down	1
LOC644192	PI16	CAMK2N2	gene	up	1
LOC644192	PRDM16	ZBTB16	gene	down	1
LOC644192	PRKAR2B	RTP4	gene	up	1
LOC644192	RUNDC3B	RFC4	gene	up	1

LOC646903	LRRC4C	ZNF540	gene	down	1
LOC727982	IL1RAP	GPRASP1	gene	down	1
LOC728052	C7orf41	MYH11	gene	down	1
LOC728052	CGNL1	EBF3	gene	down	1
LOC728052	GDF10	ATP1A2	gene	down	1
LOC728052	RIMS4	ATP8A1	gene	down	1
LOC728052	TCEAL2	ZIC5	gene	up	1
LOC728052	TNXB	LAMA2	gene	down	1
LOC728052	TRIP13	PTGIS	gene	down	1
LOC728606	BPIFB2	CRABP1	gene	down	1
LOC728606	C6orf58	KTN1-AS1	gene	up	1
LOC728606	NKX3-1	AQP7P3	gene	down	1
LOC728606	PRB1	PRR11	gene	up	1
LOC728606	PRB3	MMP11	gene	up	1
LOC728606	SPDEF	FLJ42875	lnc	down	26
MAGI2-AS3	ABCA6	XLOC_l2_0	lnc	up	25
MAGI2-AS3	ABI3BP	LOC10012	lnc	down	20
MAGI2-AS3	ACOX2	MAGI2-AS	lnc	down	18
MAGI2-AS3	AKAP12	LOC40012	lnc	down	18
MAGI2-AS3	AR	XLOC_002	lnc	down	17
MAGI2-AS3	BOC	XLOC_l2_0	lnc	down	16
MAGI2-AS3	CFH	LOC10050	lnc	down	13
MAGI2-AS3	CFHR3	LOC10013	lnc	down	12
MAGI2-AS3	CYBRD1	LOC10050	lnc	down	11
MAGI2-AS3	FZD4	XLOC_l2_0	lnc	down	10
MAGI2-AS3	PRDM16	LOC40045	lnc	down	10
MAGI2-AS3	PRUNE2	LINC00571	lnc	down	10
MAGI2-AS3	RAB9B	XLOC_l2_0	lnc	down	9
MAGI2-AS3	ROR1	XLOC_012	lnc	down	9
MAGI2-AS3	SLC7A2	XLOC_009	lnc	down	9
MAGI2-AS3	TDRD6	XLOC_010	lnc	up	8
MAGI2-AS3	ZBTB20	XLOC_009	lnc	down	8
MAGI2-AS3	ZC3H12B	XLOC_008	lnc	down	8
MCF2L-AS1	SPC24	LOC64419	lnc	down	8
PGM5P2	ANGPTL1	LOC10050	lnc	down	8
PGM5P2	LOC729468	XLOC_008	lnc	down	7
PGM5P2	P2RY14	LOC72805	lnc	down	7
PGM5P2	PGM5	XLOC_012	lnc	down	6
PGM5P2	PPAP2B	XLOC_009	lnc	down	6
PGM5P2	RECK	XLOC_008	lnc	down	6
psiTPTE22	SOX10	XLOC_007	lnc	down	6
Q6TXI9	COL14A1	XLOC_007	lnc	down	6
Q8NDX4	UPI00000726DE	XLOC_001	lnc	down	6
SNAR-A3	MMP1	PGM5P2	lnc	down	6
XLOC_001035	BMX	LOC72860	lnc	down	6
XLOC_001035	CLEC3B	LOC33952	lnc	down	6
XLOC_001035	COL14A1	CYP4Z2P	lnc	down	6
XLOC_001035	EBF1	LOC28457	lnc	down	5
XLOC_001035	PDE2A	LOC10065	lnc	up	5
XLOC_001035	RCAN2	LOC10050	lnc	down	5
XLOC_001083	CKS1B	LOC10050	lnc	up	5

XLOC_001083	PTPRN2	LOC10050(	lnc	up	5
XLOC_002066	VIT	XLOC_l2_0	lnc	down	4
XLOC_002344	ABCA6	XLOC_010:	lnc	up	4
XLOC_002344	ABI3BP	XLOC_003:	lnc	up	4
XLOC_002344	AKAP12	LOC10050!	lnc	up	4
XLOC_002344	BOC	LINC00710	lnc	down	4
XLOC_002344	CAPN6	IPW	lnc	down	4
XLOC_002344	CD302	CMAHP	lnc	down	4
XLOC_002344	CFH	XLOC_l2_0	lnc	down	3
XLOC_002344	CFHR3	XLOC_010!	lnc	up	3
XLOC_002344	CYBRD1	XLOC_005!	lnc	up	3
XLOC_002344	CYP1B1-AS1	LOC28514:	lnc	down	3
XLOC_002344	DNM3	LOC10065:	lnc	down	3
XLOC_002344	FZD4	LOC10065:	lnc	up	3
XLOC_002344	PLAC9	FAM66E	lnc	down	3
XLOC_002344	RECK	ANP32AP1	lnc	down	3
XLOC_002344	ROR1	XLOC_l2_0	lnc	up	2
XLOC_002344	SOD3	XLOC_l2_0	lnc	down	2
XLOC_002344	ZBTB20	XLOC_012!	lnc	up	2
XLOC_002603	ME3	XLOC_001(	lnc	up	2
XLOC_002962	ACTL6A	LOC40055(	lnc	down	2
XLOC_003071	MICAL3	LOC34488:	lnc	up	2
XLOC_003364	ACTL6A	LOC28302!	lnc	up	2
XLOC_003364	RPL39L	LOC10065:	lnc	up	2
XLOC_003364	SLC7A5	LOC10050(	lnc	up	2
XLOC_003364	TNXB	LOC10050(	lnc	up	2
XLOC_003595	PLAC8	LOC10012-	lnc	down	2
XLOC_003986	MFAP4	LINC00261	lnc	down	2
XLOC_005008	FAIM2	KRT42P	lnc	up	2
XLOC_005935	CTHRC1	KC6	lnc	up	2
XLOC_005935	LEPREL1	HOTAIR	lnc	up	2
XLOC_005935	MYO5C	FLJ38379	lnc	down	2
XLOC_007235	AZGP1	XLOC_l2_0	lnc	up	1
XLOC_007235	ENTPD8	XLOC_l2_0	lnc	down	1
XLOC_007235	FOLR1	XLOC_l2_0	lnc	down	1
XLOC_007235	MSMB	XLOC_l2_0	lnc	down	1
XLOC_007235	PIP	XLOC_l2_0	lnc	up	1
XLOC_007235	PRR4	XLOC_013'	lnc	up	1
XLOC_007433	CGNL1	XLOC_011!	lnc	down	1
XLOC_007433	FAM89A	XLOC_011!	lnc	down	1
XLOC_007433	GUCA2B	XLOC_010:	lnc	down	1
XLOC_007433	NR2F2	XLOC_005(	lnc	up	1
XLOC_007433	RHOJ	XLOC_003!	lnc	up	1
XLOC_007433	SCARA5	XLOC_003!	lnc	down	1
XLOC_008001	AOX1	XLOC_003(	lnc	up	1
XLOC_008001	ATOH8	XLOC_002!	lnc	up	1
XLOC_008001	CCL14	XLOC_002(	lnc	up	1
XLOC_008001	CYP1B1-AS1	XLOC_002(	lnc	down	1
XLOC_008001	ITM2A	SNAR-A3	lnc	up	1
XLOC_008001	PCM1	Q8NDX4	lnc	down	1
XLOC_008001	RAB9B	Q6TXI9	lnc	down	1

XLOC_008001	ZC3H12B	psiTPTE22	lnc	down	1
XLOC_008394	ADARB2	MCF2L-AS1	lnc	down	1
XLOC_008394	AQP5	LOC72798	lnc	up	1
XLOC_008394	MLPH	LOC64690	lnc	up	1
XLOC_008394	SHCBP1	LOC44090	lnc	up	1
XLOC_008394	SVOPL	LOC33924	lnc	up	1
XLOC_008394	TMEM125	LOC28541	lnc	down	1
XLOC_008394	TTYH1	LOC28424	lnc	down	1
XLOC_008395	ADARB2	LOC14582	lnc	down	1
XLOC_008395	AQP5	LOC10065	lnc	up	1
XLOC_008395	C6orf58	LOC10050	lnc	down	1
XLOC_008395	NKX3-1	LOC10050	lnc	down	1
XLOC_008395	PPP1R1B	LOC10050	lnc	up	1
XLOC_008395	TTYH1	LOC10050	lnc	up	1
XLOC_009437	BPIFB2	LOC10050	lnc	down	1
XLOC_009437	C6orf58	LOC10050	lnc	up	1
XLOC_009437	ENTPD8	LOC10050	lnc	up	1
XLOC_009437	NKX3-1	LOC10050	lnc	down	1
XLOC_009437	PRB1	LOC10050	lnc	up	1
XLOC_009437	PRB3	LOC10050	lnc	up	1
XLOC_009437	SPDEF	LOC10013	lnc	up	1
XLOC_009437	ZG16B	LINC00478	lnc	down	1
XLOC_009713	ADARB2	LINC00472	lnc	down	1
XLOC_009713	NKX3-1	LINC00460	lnc	up	1
XLOC_009713	PIP	GGTA1P	lnc	down	1
XLOC_009713	PRB3	FLJ37644	lnc	down	1
XLOC_009713	SLC12A2	EMX2OS	lnc	down	1
XLOC_009713	SPDEF	C14orf33	lnc	up	1
XLOC_009813	AKAP12	AQP7P1	lnc	down	1
XLOC_009813	CAPN6	A2MP1	lnc	down	1
XLOC_009813	FZD4				
XLOC_009813	INMT				
XLOC_009813	KBTBD11				
XLOC_009813	OGN				
XLOC_009813	PCM1				
XLOC_009813	PRKAR2B				
XLOC_009813	TENC1				
XLOC_010172	STAC2				
XLOC_010390	C11orf82				
XLOC_010390	MAD2L1				
XLOC_010390	ME3				
XLOC_010390	PRKAR2B				
XLOC_010962	C17orf53				
XLOC_010962	C7				
XLOC_010962	CKS1B				
XLOC_010962	HSD17B6				
XLOC_010962	KNSTRN				
XLOC_010962	RPL39L				
XLOC_010962	TRIB3				
XLOC_010962	TRIP13				
XLOC_010988	KNSTRN				

XLOC_010988	RPL39L
XLOC_010988	TRIP13
XLOC_011592	NUP62CL
XLOC_011815	LMOD1
XLOC_012112	C7orf41
XLOC_012112	CDCA3
XLOC_012112	CGNL1
XLOC_012112	FAM89A
XLOC_012112	PI16
XLOC_012112	RIMS4
XLOC_012112	SOBP
XLOC_012112	SOX8
XLOC_012112	TRIP13
XLOC_012564	CLDN10
XLOC_012564	FOLR1
XLOC_012564	KIAA1324
XLOC_012564	MFSD6L
XLOC_012564	PRR4
XLOC_012564	TFF3
XLOC_012848	GPRIN1
XLOC_012848	MMP1
XLOC_013794	PPAPDC1A
XLOC_l2_002952	C6orf58
XLOC_l2_002952	FAM72D
XLOC_l2_002952	KIF20B
XLOC_l2_002952	NKX3-1
XLOC_l2_002952	PRB1
XLOC_l2_002952	PRB3
XLOC_l2_002952	SGOL1
XLOC_l2_002952	SHCBP1
XLOC_l2_002952	SLC12A2
XLOC_l2_002952	SPDEF
XLOC_l2_006021	KRT17
XLOC_l2_007986	RNASE4
XLOC_l2_008140	ANKRD36
XLOC_l2_008976	ABCA8
XLOC_l2_008976	FRMD3
XLOC_l2_008976	GALNT16
XLOC_l2_008976	LOC729468
XLOC_l2_008976	LRRC4C
XLOC_l2_008976	MGP
XLOC_l2_008976	PGM5
XLOC_l2_008976	RECK
XLOC_l2_008976	SOD3
XLOC_l2_008991	NOVA1
XLOC_l2_009441	ASF1B
XLOC_l2_009441	ASPA
XLOC_l2_009441	C16orf74
XLOC_l2_009441	C7
XLOC_l2_009441	CDC20
XLOC_l2_009441	CDCA3

XLOC_l2_009441	CDCA8
XLOC_l2_009441	CHEK1
XLOC_l2_009441	CKS1B
XLOC_l2_009441	DEPDC1
XLOC_l2_009441	ENO2
XLOC_l2_009441	FANCI
XLOC_l2_009441	KIF14
XLOC_l2_009441	KIF23
XLOC_l2_009441	KIF2C
XLOC_l2_009441	KNSTRN
XLOC_l2_009441	MKI67
XLOC_l2_009441	OGN
XLOC_l2_009441	OIP5
XLOC_l2_009441	PI16
XLOC_l2_009441	PLK1
XLOC_l2_009441	SGOL1
XLOC_l2_009441	SMC4
XLOC_l2_009441	TPX2
XLOC_l2_009441	TRIP13
XLOC_l2_009658	GFRA1
XLOC_l2_009658	GPX3
XLOC_l2_010338	XLOC_006200
XLOC_l2_010636	ATP2A3
XLOC_l2_010636	BUB1B
XLOC_l2_010636	CACNB4
XLOC_l2_010636	CCNA2
XLOC_l2_010636	CCNB1
XLOC_l2_010636	CDCA2
XLOC_l2_010636	CDKN3
XLOC_l2_010636	CENPE
XLOC_l2_010636	DEPDC1
XLOC_l2_010636	DIAPH3
XLOC_l2_010636	FAM72D
XLOC_l2_010636	HIST1H2BF
XLOC_l2_010636	HMMR
XLOC_l2_010636	POLQ
XLOC_l2_010636	RACGAP1
XLOC_l2_010636	SGOL1
XLOC_l2_013031	ACACB
XLOC_l2_013031	AMY1C
XLOC_l2_013031	BID
XLOC_l2_013031	IL17D
XLOC_l2_014802	AMY1C
XLOC_l2_014802	DLG2
XLOC_l2_014802	HOXA2
XLOC_l2_015789	C1QL1
XLOC_l2_015789	XLOC_006200

Regulatory pairs		Node and degree			
miRNA	**Target DEG**	**Node_name**	**Style**	**Type**	**Degree**
hsa-miR-204-5p	ADAM12	IGF1	down	gene	10
hsa-miR-204-5p	B3GNT5	ERBB4	down	gene	8
hsa-miR-204-5p	IRF6	TGFBR2	down	gene	8
hsa-miR-204-5p	KREMEN1	SASH1	down	gene	8
hsa-miR-204-5p	LEPREL1	PIK3R1	down	gene	8
hsa-miR-204-5p	NXPH4	NBEA	down	gene	7
hsa-miR-204-5p	PRR11	RBMS3	down	gene	6
hsa-miR-204-5p	RRM2	PRUNE2	down	gene	6
hsa-miR-204-5p	WNT4	AFF3	down	gene	6
hsa-miR-375	CLCN2	IL6ST	down	gene	6
hsa-miR-375	NXPH4	HLF	down	gene	6
hsa-miR-375	SHOX2	RECK	down	gene	5
hsa-miR-375	SLC7A11	THSD7A	down	gene	5
hsa-miR-4481	GRIN2D	RAB9B	down	gene	5
hsa-miR-4481	SLC2A1	NR3C2	down	gene	5
hsa-miR-4481	TNFRSF12A	VGLL3	down	gene	5
hsa-miR-4687-3p	B4GALNT1	NOVA1	down	gene	5
hsa-miR-4721	TP63	DLG2	down	gene	5
hsa-miR-5096	COL5A1	CNR1	down	gene	5
hsa-miR-5096	SLC7A11	SMOC2	down	gene	5
hsa-miR-513b	GPRIN1	LOC388630	down	gene	5
hsa-miR-513b	MND1	FZD4	down	gene	5
hsa-miR-513b	PFN2	DLC1	down	gene	5
hsa-miR-106b-5p	AGFG2	ATP1A2	down	gene	5
hsa-miR-106b-5p	ATOH8	SLC12A2	down	gene	4
hsa-miR-106b-5p	ATP1A2	CAPN6	down	gene	4
hsa-miR-106b-5p	C7orf41	DCLK1	down	gene	4
hsa-miR-106b-5p	CNN1	FGF7	down	gene	4
hsa-miR-106b-5p	CYBRD1	AMOT	down	gene	4
hsa-miR-106b-5p	DLC1	EBF1	down	gene	4
hsa-miR-106b-5p	FAIM2	LIMCH1	down	gene	4
hsa-miR-106b-5p	FRZB	KIT	down	gene	4
hsa-miR-106b-5p	FZD4	ESR1	down	gene	4
hsa-miR-106b-5p	GLDN	ENPP4	down	gene	4
hsa-miR-106b-5p	HLF	PRDM16	down	gene	4
hsa-miR-106b-5p	IL6ST	NR2F2	down	gene	4
hsa-miR-106b-5p	KAT2B	SOBP	down	gene	4
hsa-miR-106b-5p	KCNMA1	PTGER3	down	gene	4
hsa-miR-106b-5p	LOC388630	NTRK3	down	gene	4
hsa-miR-106b-5p	MGLL	FRZB	down	gene	4
hsa-miR-106b-5p	NBEA	AGFG2	down	gene	4
hsa-miR-106b-5p	NTRK3	SLC13A3	down	gene	3
hsa-miR-106b-5p	PIK3R1	GFRA1	down	gene	3
hsa-miR-106b-5p	PTGER3	SYNPO2	down	gene	3
hsa-miR-106b-5p	RORC	CTGF	down	gene	3
hsa-miR-106b-5p	SASH1	SYBU	down	gene	3
hsa-miR-106b-5p	SLC7A2	RNF180	down	gene	3
hsa-miR-106b-5p	SMOC2	CXCL12	down	gene	3
hsa-miR-106b-5p	SOBP	ZC3H12B	down	gene	3

hsa-miR-106b-5p	SV2B	SRL	down	gene	3
hsa-miR-106b-5p	TGFBR2	SH3BGRL2	down	gene	3
hsa-miR-128	AFF3	PPARG	down	gene	3
hsa-miR-128	AGFG2	NEBL	down	gene	3
hsa-miR-128	ATP10B	EBF3	down	gene	3
hsa-miR-128	ATP8A1	ATP8A1	down	gene	3
hsa-miR-128	C7orf41	SV2B	down	gene	3
hsa-miR-128	CACNB2	SLC7A2	down	gene	3
hsa-miR-128	CNR1	MGLL	down	gene	3
hsa-miR-128	CNTN2	KCNMA1	down	gene	3
hsa-miR-128	COL21A1	KAT2B	down	gene	3
hsa-miR-128	DLG2	CYBRD1	down	gene	3
hsa-miR-128	EBF3	CNN1	down	gene	3
hsa-miR-128	FAM184A	C7orf41	down	gene	3
hsa-miR-128	FAM84B	RIMS4	down	gene	2
hsa-miR-128	FBLN5	CACNB4	down	gene	2
hsa-miR-128	IGF1	ITGA10	down	gene	2
hsa-miR-128	IGJ	FGF2	down	gene	2
hsa-miR-128	KBTBD11	ADAMTS1	down	gene	2
hsa-miR-128	NCAM1	AKAP12	down	gene	2
hsa-miR-128	NEBL	ADRA2A	down	gene	2
hsa-miR-128	NGFR	TIMP3	down	gene	2
hsa-miR-128	NOVA1	NTF3	down	gene	2
hsa-miR-128	NR2F2	SORBS1	down	gene	2
hsa-miR-128	NTRK3	TSPAN12	down	gene	2
hsa-miR-128	PAX9	CORIN	down	gene	2
hsa-miR-128	PCM1	COL14A1	down	gene	2
hsa-miR-128	PIK3R1	MYRIP	down	gene	2
hsa-miR-128	PLEKHH2	PLEKHA6	down	gene	2
hsa-miR-128	PPAP2B	CLCN4	down	gene	2
hsa-miR-128	PPARG	SLAIN1	down	gene	2
hsa-miR-128	PRDM16	NDRG2	down	gene	2
hsa-miR-128	PTGER3	AR	down	gene	2
hsa-miR-128	RCAN2	ADARB2	down	gene	2
hsa-miR-128	SASH1	STK39	down	gene	2
hsa-miR-128	SH3BGRL2	PPAP2B	down	gene	2
hsa-miR-128	SHE	PCM1	down	gene	2
hsa-miR-128	SMAD9	PAX9	down	gene	2
hsa-miR-128	SMPD3	IGJ	down	gene	2
hsa-miR-128	SRL	FAM84B	down	gene	2
hsa-miR-128	STK39	CACNB2	down	gene	2
hsa-miR-128	VGLL3	RORC	down	gene	2
hsa-miR-128	ZC3H12B	GLDN	down	gene	2
hsa-miR-130b-3p	ADARB2	FAIM2	down	gene	2
hsa-miR-130b-3p	AFF3	ATOH8	down	gene	2
hsa-miR-130b-3p	AR	SLC7A11	up	gene	2
hsa-miR-130b-3p	ATP1A2	NXPH4	up	gene	2
hsa-miR-130b-3p	CNR1	ZNF385D	down	gene	1
hsa-miR-130b-3p	CXCL12	CLDN10	down	gene	1
hsa-miR-130b-3p	DLC1	MFAP4	down	gene	1
hsa-miR-130b-3p	DLG2	SLC16A7	down	gene	1

hsa-miR-130b-3p	EBF3	MYO5C	down	gene	1
hsa-miR-130b-3p	ENPP4	TRNP1	down	gene	1
hsa-miR-130b-3p	ERBB4	PRH2	down	gene	1
hsa-miR-130b-3p	ESR1	RUNDC3B	down	gene	1
hsa-miR-130b-3p	FRZB	PKDCC	down	gene	1
hsa-miR-130b-3p	HLF	PID1	down	gene	1
hsa-miR-130b-3p	IGF1	PDK4	down	gene	1
hsa-miR-130b-3p	IL6ST	LMOD1	down	gene	1
hsa-miR-130b-3p	KIT	LDOC1	down	gene	1
hsa-miR-130b-3p	NBEA	KCNN4	down	gene	1
hsa-miR-130b-3p	NDRG2	CD302	down	gene	1
hsa-miR-130b-3p	NR3C2	MBP	down	gene	1
hsa-miR-130b-3p	PPARG	CLMN	down	gene	1
hsa-miR-130b-3p	PRUNE2	GPD1L	down	gene	1
hsa-miR-130b-3p	RAB9B	TC2N	down	gene	1
hsa-miR-130b-3p	RNF180	RBM47	down	gene	1
hsa-miR-130b-3p	SASH1	PI16	down	gene	1
hsa-miR-130b-3p	SLAIN1	FAM174B	down	gene	1
hsa-miR-130b-3p	SMOC2	DNM3	down	gene	1
hsa-miR-130b-3p	SYBU	CLDN11	down	gene	1
hsa-miR-130b-3p	TGFBR2	ACACB	down	gene	1
hsa-miR-130b-3p	THSD7A	VSIG10L	down	gene	1
hsa-miR-130b-3p	VGLL3	KIF13B	down	gene	1
hsa-miR-18a-5p	ATP8A1	GULP1	down	gene	1
hsa-miR-18a-5p	CLCN4	CAB39L	down	gene	1
hsa-miR-18a-5p	CTGF	PTGIS	down	gene	1
hsa-miR-18a-5p	ESR1	MAP2	down	gene	1
hsa-miR-18a-5p	HLF	ID4	down	gene	1
hsa-miR-18a-5p	IGF1	AQP3	down	gene	1
hsa-miR-18a-5p	KIT	ANGPTL1	down	gene	1
hsa-miR-18a-5p	PLEKHA6	SORBS2	down	gene	1
hsa-miR-18a-5p	SORBS2	SMPD3	down	gene	1
hsa-miR-194-5p	AFF3	SMAD9	down	gene	1
hsa-miR-194-5p	ANGPTL1	SHE	down	gene	1
hsa-miR-194-5p	AQP3	RCAN2	down	gene	1
hsa-miR-194-5p	CNR1	PLEKHH2	down	gene	1
hsa-miR-194-5p	ERBB4	NGFR	down	gene	1
hsa-miR-194-5p	FZD4	NCAM1	down	gene	1
hsa-miR-194-5p	ID4	KBTBD11	down	gene	1
hsa-miR-194-5p	IL6ST	FBLN5	down	gene	1
hsa-miR-194-5p	LIMCH1	FAM184A	down	gene	1
hsa-miR-194-5p	MAP2	COL21A1	down	gene	1
hsa-miR-194-5p	MGLL	CNTN2	down	gene	1
hsa-miR-194-5p	MYRIP	ATP10B	down	gene	1
hsa-miR-194-5p	NR2F2	PFN2	up	gene	1
hsa-miR-194-5p	PRDM16	MND1	up	gene	1
hsa-miR-194-5p	PTGIS	GPRIN1	up	gene	1
hsa-miR-194-5p	SH3BGRL2	COL5A1	up	gene	1
hsa-miR-194-5p	SYNPO2	TP63	up	gene	1
hsa-miR-196a-5p	COL14A1	B4GALNT1	up	gene	1
hsa-miR-196a-5p	CORIN	TNFRSF12A	up	gene	1

hsa-miR-196a-5p	EBF1	SLC2A1	up	gene	1
hsa-miR-196a-5p	IGF1	GRIN2D	up	gene	1
hsa-miR-196a-5p	PRUNE2	SHOX2	up	gene	1
hsa-miR-196a-5p	TSPAN12	CLCN2	up	gene	1
hsa-miR-196b-5p	COL14A1	WNT4	up	gene	1
hsa-miR-196b-5p	CORIN	RRM2	up	gene	1
hsa-miR-196b-5p	EBF1	PRR11	up	gene	1
hsa-miR-196b-5p	IGF1	LEPREL1	up	gene	1
hsa-miR-196b-5p	PRUNE2	KREMEN1	up	gene	1
hsa-miR-196b-5p	TSPAN12	IRF6	up	gene	1
hsa-miR-19a-3p	ATP1A2	B3GNT5	up	gene	1
hsa-miR-19a-3p	CAB39L	ADAM12	up	gene	1
hsa-miR-19a-3p	CNR1	hsa-miR-128	up	miRNA	41
hsa-miR-19a-3p	CTGF	hsa-miR-424-5p	up	miRNA	35
hsa-miR-19a-3p	CXCL12	hsa-miR-301a-3p	up	miRNA	31
hsa-miR-19a-3p	DLC1	hsa-miR-130b-3p	up	miRNA	31
hsa-miR-19a-3p	EBF1	hsa-miR-19a-3p	up	miRNA	30
hsa-miR-19a-3p	ENPP4	hsa-miR-93-5p	up	miRNA	28
hsa-miR-19a-3p	ERBB4	hsa-miR-106b-5p	up	miRNA	28
hsa-miR-19a-3p	ESR1	hsa-miR-944	up	miRNA	21
hsa-miR-19a-3p	GULP1	hsa-miR-205-5p	up	miRNA	19
hsa-miR-19a-3p	HLF	hsa-miR-194-5p	up	miRNA	17
hsa-miR-19a-3p	IGF1	hsa-miR-503-5p	up	miRNA	14
hsa-miR-19a-3p	IL6ST	hsa-miR-33a-5p	up	miRNA	12
hsa-miR-19a-3p	KIF13B	hsa-miR-590-5p	up	miRNA	9
hsa-miR-19a-3p	KIT	hsa-miR-21-5p	up	miRNA	9
hsa-miR-19a-3p	LIMCH1	hsa-miR-18a-5p	up	miRNA	9
hsa-miR-19a-3p	LOC388630	hsa-miR-204-5p	down	miRNA	9
hsa-miR-19a-3p	NBEA	hsa-miR-7-5p	up	miRNA	6
hsa-miR-19a-3p	NR3C2	hsa-miR-455-5p	up	miRNA	6
hsa-miR-19a-3p	PRUNE2	hsa-miR-212-3p	up	miRNA	6
hsa-miR-19a-3p	RBMS3	hsa-miR-196b-5p	up	miRNA	6
hsa-miR-19a-3p	SMOC2	hsa-miR-196a-5p	up	miRNA	6
hsa-miR-19a-3p	STK39	hsa-miR-769-5p	up	miRNA	5
hsa-miR-19a-3p	SYBU	hsa-miR-339-5p	up	miRNA	5
hsa-miR-19a-3p	SYNPO2	hsa-miR-708-5p	up	miRNA	4
hsa-miR-19a-3p	TGFBR2	hsa-miR-502-5p	up	miRNA	4
hsa-miR-19a-3p	THSD7A	hsa-miR-375	down	miRNA	4
hsa-miR-19a-3p	VGLL3	hsa-miR-455-3p	up	miRNA	3
hsa-miR-19a-3p	VSIG10L	hsa-miR-513b	down	miRNA	3
hsa-miR-205-5p	ACACB	hsa-miR-4481	down	miRNA	3
hsa-miR-205-5p	AFF3	hsa-miR-210	up	miRNA	2
hsa-miR-205-5p	AMOT	hsa-miR-5096	down	miRNA	2
hsa-miR-205-5p	CLDN11	hsa-miR-215	up	miRNA	1
hsa-miR-205-5p	DLG2	hsa-miR-4721	down	miRNA	1
hsa-miR-205-5p	DNM3	hsa-miR-4687-3p	down	miRNA	1
hsa-miR-205-5p	ENPP4				
hsa-miR-205-5p	ERBB4				
hsa-miR-205-5p	FAM174B				
hsa-miR-205-5p	FAM84B				
hsa-miR-205-5p	GFRA1				

hsa-miR-205-5p	NR3C2
hsa-miR-205-5p	PAX9
hsa-miR-205-5p	PI16
hsa-miR-205-5p	PRDM16
hsa-miR-205-5p	RAB9B
hsa-miR-205-5p	RBM47
hsa-miR-205-5p	SORBS1
hsa-miR-205-5p	TC2N
hsa-miR-210	GPD1L
hsa-miR-210	THSD7A
hsa-miR-212-3p	AMOT
hsa-miR-212-3p	CLMN
hsa-miR-212-3p	CTGF
hsa-miR-212-3p	FGF7
hsa-miR-212-3p	MBP
hsa-miR-212-3p	NOVA1
hsa-miR-215	IGF1
hsa-miR-21-5p	NBEA
hsa-miR-21-5p	NTF3
hsa-miR-21-5p	PIK3R1
hsa-miR-21-5p	RBMS3
hsa-miR-21-5p	RECK
hsa-miR-21-5p	SASH1
hsa-miR-21-5p	SRL
hsa-miR-21-5p	TGFBR2
hsa-miR-21-5p	TIMP3
hsa-miR-301a-3p	ADARB2
hsa-miR-301a-3p	AFF3
hsa-miR-301a-3p	AR
hsa-miR-301a-3p	ATP1A2
hsa-miR-301a-3p	CNR1
hsa-miR-301a-3p	CXCL12
hsa-miR-301a-3p	DLC1
hsa-miR-301a-3p	DLG2
hsa-miR-301a-3p	EBF3
hsa-miR-301a-3p	ENPP4
hsa-miR-301a-3p	ERBB4
hsa-miR-301a-3p	ESR1
hsa-miR-301a-3p	FRZB
hsa-miR-301a-3p	HLF
hsa-miR-301a-3p	IGF1
hsa-miR-301a-3p	IL6ST
hsa-miR-301a-3p	KIT
hsa-miR-301a-3p	NBEA
hsa-miR-301a-3p	NDRG2
hsa-miR-301a-3p	NR3C2
hsa-miR-301a-3p	PPARG
hsa-miR-301a-3p	PRUNE2
hsa-miR-301a-3p	RAB9B
hsa-miR-301a-3p	RNF180
hsa-miR-301a-3p	SASH1

hsa-miR-301a-3p	SLAIN1
hsa-miR-301a-3p	SMOC2
hsa-miR-301a-3p	SYBU
hsa-miR-301a-3p	TGFBR2
hsa-miR-301a-3p	THSD7A
hsa-miR-301a-3p	VGLL3
hsa-miR-339-5p	ADRA2A
hsa-miR-339-5p	CACNB2
hsa-miR-339-5p	ERBB4
hsa-miR-339-5p	FZD4
hsa-miR-339-5p	NOVA1
hsa-miR-33a-5p	ADRA2A
hsa-miR-33a-5p	AFF3
hsa-miR-33a-5p	AKAP12
hsa-miR-33a-5p	ATP8A1
hsa-miR-33a-5p	CD302
hsa-miR-33a-5p	DCLK1
hsa-miR-33a-5p	EBF1
hsa-miR-33a-5p	KCNMA1
hsa-miR-33a-5p	LIMCH1
hsa-miR-33a-5p	NOVA1
hsa-miR-33a-5p	RECK
hsa-miR-33a-5p	RNF180
hsa-miR-424-5p	ADAMTS1
hsa-miR-424-5p	AGFG2
hsa-miR-424-5p	AKAP12
hsa-miR-424-5p	AMOT
hsa-miR-424-5p	CAPN6
hsa-miR-424-5p	CLCN4
hsa-miR-424-5p	CNN1
hsa-miR-424-5p	DCLK1
hsa-miR-424-5p	FGF2
hsa-miR-424-5p	FGF7
hsa-miR-424-5p	FZD4
hsa-miR-424-5p	IGF1
hsa-miR-424-5p	ITGA10
hsa-miR-424-5p	KCNN4
hsa-miR-424-5p	LDOC1
hsa-miR-424-5p	LMOD1
hsa-miR-424-5p	LOC388630
hsa-miR-424-5p	MYRIP
hsa-miR-424-5p	NEBL
hsa-miR-424-5p	PCM1
hsa-miR-424-5p	PDK4
hsa-miR-424-5p	PID1
hsa-miR-424-5p	PIK3R1
hsa-miR-424-5p	PKDCC
hsa-miR-424-5p	PPAP2B
hsa-miR-424-5p	RAB9B
hsa-miR-424-5p	RBMS3
hsa-miR-424-5p	RECK

hsa-miR-424-5p	RUNDC3B
hsa-miR-424-5p	SH3BGRL2
hsa-miR-424-5p	SLC12A2
hsa-miR-424-5p	SLC13A3
hsa-miR-424-5p	SLC7A2
hsa-miR-424-5p	SOBP
hsa-miR-424-5p	ZC3H12B
hsa-miR-455-3p	FGF7
hsa-miR-455-3p	NR2F2
hsa-miR-455-3p	PIK3R1
hsa-miR-455-5p	CACNB4
hsa-miR-455-5p	ERBB4
hsa-miR-455-5p	PLEKHA6
hsa-miR-455-5p	PRH2
hsa-miR-455-5p	RIMS4
hsa-miR-455-5p	THSD7A
hsa-miR-502-5p	ITGA10
hsa-miR-502-5p	NR2F2
hsa-miR-502-5p	RIMS4
hsa-miR-502-5p	TGFBR2
hsa-miR-503-5p	ADAMTS1
hsa-miR-503-5p	CAPN6
hsa-miR-503-5p	DCLK1
hsa-miR-503-5p	FGF2
hsa-miR-503-5p	FGF7
hsa-miR-503-5p	IGF1
hsa-miR-503-5p	LOC388630
hsa-miR-503-5p	NEBL
hsa-miR-503-5p	PIK3R1
hsa-miR-503-5p	RAB9B
hsa-miR-503-5p	RECK
hsa-miR-503-5p	SLC12A2
hsa-miR-503-5p	SLC13A3
hsa-miR-503-5p	SOBP
hsa-miR-590-5p	NBEA
hsa-miR-590-5p	NTF3
hsa-miR-590-5p	PIK3R1
hsa-miR-590-5p	RBMS3
hsa-miR-590-5p	RECK
hsa-miR-590-5p	SASH1
hsa-miR-590-5p	SRL
hsa-miR-590-5p	TGFBR2
hsa-miR-590-5p	TIMP3
hsa-miR-708-5p	CAPN6
hsa-miR-708-5p	PRUNE2
hsa-miR-708-5p	SLC13A3
hsa-miR-708-5p	TRNP1
hsa-miR-7-5p	CACNB4
hsa-miR-7-5p	ERBB4
hsa-miR-7-5p	MYO5C
hsa-miR-7-5p	RBMS3

hsa-miR-7-5p	SLC12A2
hsa-miR-7-5p	SLC16A7
hsa-miR-769-5p	GFRA1
hsa-miR-769-5p	MFAP4
hsa-miR-769-5p	NTRK3
hsa-miR-769-5p	SYNPO2
hsa-miR-769-5p	ZC3H12B
hsa-miR-93-5p	AGFG2
hsa-miR-93-5p	ATOH8
hsa-miR-93-5p	ATP1A2
hsa-miR-93-5p	C7orf41
hsa-miR-93-5p	CNN1
hsa-miR-93-5p	CYBRD1
hsa-miR-93-5p	DLC1
hsa-miR-93-5p	FAIM2
hsa-miR-93-5p	FRZB
hsa-miR-93-5p	FZD4
hsa-miR-93-5p	GLDN
hsa-miR-93-5p	HLF
hsa-miR-93-5p	IL6ST
hsa-miR-93-5p	KAT2B
hsa-miR-93-5p	KCNMA1
hsa-miR-93-5p	LOC388630
hsa-miR-93-5p	MGLL
hsa-miR-93-5p	NBEA
hsa-miR-93-5p	NTRK3
hsa-miR-93-5p	PIK3R1
hsa-miR-93-5p	PTGER3
hsa-miR-93-5p	RORC
hsa-miR-93-5p	SASH1
hsa-miR-93-5p	SLC7A2
hsa-miR-93-5p	SMOC2
hsa-miR-93-5p	SOBP
hsa-miR-93-5p	SV2B
hsa-miR-93-5p	TGFBR2
hsa-miR-944	AMOT
hsa-miR-944	CAPN6
hsa-miR-944	CLDN10
hsa-miR-944	CYBRD1
hsa-miR-944	DCLK1
hsa-miR-944	DLG2
hsa-miR-944	GFRA1
hsa-miR-944	IGJ
hsa-miR-944	KAT2B
hsa-miR-944	LIMCH1
hsa-miR-944	NOVA1
hsa-miR-944	NR3C2
hsa-miR-944	PRDM16
hsa-miR-944	PTGER3
hsa-miR-944	RBMS3
hsa-miR-944	SASH1

hsa-miR-944	SLC12A2
hsa-miR-944	SORBS1
hsa-miR-944	SV2B
hsa-miR-944	VGLL3
hsa-miR-944	ZNF385D

Interacted pairs		Node and degree			
DE-lncRNAs	**DE-miRNAs**				
A2MP1	hsa-miR-17-3p	**Node_name**	**Style**	**Type**	**Degree**
A2MP1	hsa-miR-196b-5p	XLOC_011183	down	lnc	27
A2MP1	hsa-miR-21-5p	XIST	down	lnc	25
ADAMTS9-AS2	hsa-miR-17-3p	LINC00472	down	lnc	21
ADAMTS9-AS2	hsa-miR-196a-5p	MAGI2-AS3	down	lnc	20
ADAMTS9-AS2	hsa-miR-196b-5p	IPW	down	lnc	20
ADAMTS9-AS2	hsa-miR-200c-5p	LOC400550	down	lnc	19
ADAMTS9-AS2	hsa-miR-455-3p	LOC339524	down	lnc	19
ADAMTS9-AS2	hsa-miR-708-5p	LINC00261	down	lnc	19
ADAMTS9-AS2	hsa-miR-7-5p	XLOC_005764	down	lnc	18
AKR1CL1	hsa-miR-139-3p	EMX2OS	down	lnc	16
AKR1CL1	hsa-miR-4721	LOC284276	down	lnc	15
AKR1CL1	hsa-miR-5096	C10orf112	down	lnc	15
ALOX12P2	hsa-miR-204-5p	XLOC_014508	down	lnc	14
ALOX12P2	hsa-miR-486-5p	XLOC_006350	down	lnc	14
ALOX12P2	hsa-miR-718	LOC145820	down	lnc	14
ANKRD26P3	hsa-miR-139-3p	XLOC_000375	down	lnc	13
ANKRD26P3	hsa-miR-486-5p	TTTY15	down	lnc	13
ANKRD26P3	hsa-miR-718	XLOC_009713	down	lnc	12
ANO1-AS2	hsa-miR-204-5p	XLOC_006726	down	lnc	12
ANP32AP1	hsa-miR-196a-5p	LINC00478	down	lnc	12
ANP32AP1	hsa-miR-205-5p	CYP4F24P	down	lnc	12
ANP32AP1	hsa-miR-708-5p	XLOC_l2_008991	down	lnc	11
AQP7P1	hsa-miR-106b-5p	XLOC_l2_008976	down	lnc	11
AQP7P1	hsa-miR-205-3p	XLOC_009021	down	lnc	11
AQP7P1	hsa-miR-205-5p	LOC728606	down	lnc	11
AQP7P1	hsa-miR-33a-5p	LOC100506123	down	lnc	11
AQP7P1	hsa-miR-455-3p	LOC100289255	down	lnc	11
AQP7P1	hsa-miR-93-5p	XLOC_l2_007986	down	lnc	10
C10orf112	hsa-miR-106b-5p	XLOC_l2_003419	down	lnc	10
C10orf112	hsa-miR-130b-3p	PGM5P2	down	lnc	10
C10orf112	hsa-miR-17-3p	LOC400128	down	lnc	10
C10orf112	hsa-miR-181a-2-3p	LOC100507632	down	lnc	10
C10orf112	hsa-miR-18a-5p	LOC100124692	down	lnc	10
C10orf112	hsa-miR-196a-5p	ZNF503-AS1	down	lnc	9
C10orf112	hsa-miR-196b-5p	XLOC_010929	down	lnc	9
C10orf112	hsa-miR-21-3p	XLOC_010172	down	lnc	9
C10orf112	hsa-miR-301a-3p	XLOC_006938	down	lnc	9
C10orf112	hsa-miR-339-3p	TXLNG2P	down	lnc	9
C10orf112	hsa-miR-455-3p	LOC100131825	down	lnc	9
C10orf112	hsa-miR-502-5p	LINC00330	down	lnc	9
C10orf112	hsa-miR-590-5p	CMAHP	down	lnc	9
C10orf112	hsa-miR-708-5p	XLOC_012564	down	lnc	8
C10orf112	hsa-miR-769-5p	XLOC_011585	down	lnc	8
C14orf33	hsa-miR-4687-3p	XLOC_009813	down	lnc	8
C6orf147	hsa-miR-486-5p	XLOC_001558	down	lnc	8
C6orf147	hsa-miR-718	SDIM1	down	lnc	8
CMAHP	hsa-miR-181a-2-3p	Q8NDX4	down	lnc	8

CMAHP	hsa-miR-205-3p	LOC284578	down	lnc	8
CMAHP	hsa-miR-205-5p	LINC00473	down	lnc	8
CMAHP	hsa-miR-21-3p	ZNF300P1	down	lnc	7
CMAHP	hsa-miR-33a-5p	XLOC_l2_010636	down	lnc	7
CMAHP	hsa-miR-424-5p	XLOC_l2_009136	down	lnc	7
CMAHP	hsa-miR-455-5p	XLOC_l2_002952	down	lnc	7
CMAHP	hsa-miR-502-5p	TTTY10	down	lnc	7
CMAHP	hsa-miR-708-5p	LOC440925	down	lnc	7
CYP4F24P	hsa-miR-106b-5p	KRT42P	up	lnc	7
CYP4F24P	hsa-miR-18a-5p	CYP4Z2P	down	lnc	7
CYP4F24P	hsa-miR-196a-5p	ADAMTS9-AS2	down	lnc	7
CYP4F24P	hsa-miR-196b-5p	XLOC_l2_009441	up	lnc	6
CYP4F24P	hsa-miR-200c-5p	XLOC_014219	up	lnc	6
CYP4F24P	hsa-miR-205-5p	XLOC_011815	down	lnc	6
CYP4F24P	hsa-miR-339-5p	XLOC_011294	down	lnc	6
CYP4F24P	hsa-miR-33a-5p	XLOC_007433	down	lnc	6
CYP4F24P	hsa-miR-424-5p	XLOC_006043	down	lnc	6
CYP4F24P	hsa-miR-502-5p	NBLA00301	down	lnc	6
CYP4F24P	hsa-miR-503-5p	LOC440905	up	lnc	6
CYP4F24P	hsa-miR-93-5p	LOC400084	down	lnc	6
CYP4Z2P	hsa-miR-21-5p	LOC100506207	down	lnc	6
CYP4Z2P	hsa-miR-301a-3p	AQP7P1	down	lnc	6
CYP4Z2P	hsa-miR-424-5p	XLOC_007734	down	lnc	5
CYP4Z2P	hsa-miR-431-3p	XLOC_005918	down	lnc	5
CYP4Z2P	hsa-miR-503-5p	XLOC_005365	down	lnc	5
CYP4Z2P	hsa-miR-590-5p	XLOC_004423	down	lnc	5
CYP4Z2P	hsa-miR-769-5p	XLOC_003475	down	lnc	5
DKFZp434J0226	hsa-miR-139-3p	XLOC_000587	up	lnc	5
DKFZp434J0226	hsa-miR-204-5p	Q6TXI9	down	lnc	5
DKFZp434J0226	hsa-miR-4481	PP14571	down	lnc	5
DUSP5P	hsa-miR-4721	LOC651536	down	lnc	5
EMX2OS	hsa-miR-106b-5p	LOC100505976	down	lnc	5
EMX2OS	hsa-miR-130b-3p	LOC100128252	down	lnc	5
EMX2OS	hsa-miR-18a-5p	LINC00571	down	lnc	5
EMX2OS	hsa-miR-196a-5p	GGTA1P	down	lnc	5
EMX2OS	hsa-miR-196b-5p	XLOC_l2_009182	up	lnc	4
EMX2OS	hsa-miR-200c-5p	XLOC_l2_000297	up	lnc	4
EMX2OS	hsa-miR-205-3p	XLOC_013794	up	lnc	4
EMX2OS	hsa-miR-205-5p	XLOC_011592	down	lnc	4
EMX2OS	hsa-miR-21-3p	XLOC_011331	up	lnc	4
EMX2OS	hsa-miR-301a-3p	XLOC_011104	down	lnc	4
EMX2OS	hsa-miR-339-5p	XLOC_010828	up	lnc	4
EMX2OS	hsa-miR-424-5p	XLOC_009378	up	lnc	4
EMX2OS	hsa-miR-455-5p	XLOC_001035	down	lnc	4
EMX2OS	hsa-miR-503-5p	TEX26-AS1	up	lnc	4
EMX2OS	hsa-miR-708-5p	MCF2L-AS1	down	lnc	4
EMX2OS	hsa-miR-93-5p	LOC440910	up	lnc	4
FAM66E	hsa-miR-196a-5p	LOC440040	up	lnc	4
FAM66E	hsa-miR-339-5p	LOC339240	up	lnc	4
FAM66E	hsa-miR-502-5p	LOC100506305	up	lnc	4

FAM66E	hsa-miR-7-5p	FAM66E	down	lnc	4
FLJ30838	hsa-miR-204-5p	XLOC_l2_015800	down	lnc	3
FLJ30838	hsa-miR-4721	XLOC_l2_014697	up	lnc	3
FLJ30838	hsa-miR-5096	XLOC_l2_009658	down	lnc	3
GBP1P1	hsa-miR-4687-3p	XLOC_012112	down	lnc	3
GGTA1P	hsa-miR-18a-5p	XLOC_011728	up	lnc	3
GGTA1P	hsa-miR-33a-5p	XLOC_010813	up	lnc	3
GGTA1P	hsa-miR-431-3p	XLOC_010455	down	lnc	3
GGTA1P	hsa-miR-455-3p	XLOC_010390	up	lnc	3
GGTA1P	hsa-miR-944	XLOC_008395	down	lnc	3
HOTAIR	hsa-miR-204-5p	XLOC_007038	down	lnc	3
HOTAIR	hsa-miR-5096	XLOC_002066	down	lnc	3
HOXA11-AS1	hsa-miR-4687-3p	LOC727982	up	lnc	3
HOXA11-AS1	hsa-miR-4721	LOC386597	up	lnc	3
HOXA11-AS1	hsa-miR-718	LOC285419	down	lnc	3
HSD52	hsa-miR-106b-5p	LOC253573	up	lnc	3
HSD52	hsa-miR-18a-5p	LOC100653149	up	lnc	3
HSD52	hsa-miR-708-5p	LOC100653147	up	lnc	3
IL8	hsa-miR-4721	LOC100507412	up	lnc	3
IPW	hsa-miR-130b-3p	LOC100507240	up	lnc	3
IPW	hsa-miR-181a-2-3p	LOC100506948	down	lnc	3
IPW	hsa-miR-18a-5p	HSD52	down	lnc	3
IPW	hsa-miR-194-5p	HOXA11-AS1	up	lnc	3
IPW	hsa-miR-196a-5p	FLJ30838	up	lnc	3
IPW	hsa-miR-196b-5p	DKFZp434J0226	up	lnc	3
IPW	hsa-miR-19a-3p	ANP32AP1	down	lnc	3
IPW	hsa-miR-205-3p	ANKRD26P3	up	lnc	3
IPW	hsa-miR-205-5p	ALOX12P2	up	lnc	3
IPW	hsa-miR-212-3p	AKR1CL1	up	lnc	3
IPW	hsa-miR-21-3p	A2MP1	down	lnc	3
IPW	hsa-miR-301a-3p	XLOC_l2_009442	up	lnc	2
IPW	hsa-miR-339-5p	XLOC_l2_009131	down	lnc	2
IPW	hsa-miR-33a-5p	XLOC_l2_007566	up	lnc	2
IPW	hsa-miR-455-5p	XLOC_l2_005916	up	lnc	2
IPW	hsa-miR-502-5p	XLOC_l2_004121	up	lnc	2
IPW	hsa-miR-590-5p	XLOC_012977	up	lnc	2
IPW	hsa-miR-708-5p	XLOC_010962	up	lnc	2
IPW	hsa-miR-7-5p	XLOC_009437	down	lnc	2
IPW	hsa-miR-944	XLOC_009124	up	lnc	2
KC6	hsa-miR-204-5p	XLOC_008108	up	lnc	2
KRT42P	hsa-miR-139-3p	XLOC_004201	up	lnc	2
KRT42P	hsa-miR-204-5p	XLOC_003787	down	lnc	2
KRT42P	hsa-miR-4481	XLOC_003223	down	lnc	2
KRT42P	hsa-miR-4687-3p	XLOC_003146	up	lnc	2
KRT42P	hsa-miR-4721	XLOC_003071	up	lnc	2
KRT42P	hsa-miR-5096	XLOC_002967	up	lnc	2
KRT42P	hsa-miR-718	XLOC_001826	up	lnc	2
LINC00261	hsa-miR-130b-3p	XLOC_000983	down	lnc	2
LINC00261	hsa-miR-17-3p	XLOC_000281	down	lnc	2
LINC00261	hsa-miR-181a-2-3p	TCAM1P	up	lnc	2

LINC00261	hsa-miR-196a-5p	LOC646903	up	lnc	2
LINC00261	hsa-miR-196b-5p	LOC400456	down	lnc	2
LINC00261	hsa-miR-19a-3p	LOC170425	up	lnc	2
LINC00261	hsa-miR-205-5p	LOC100506714	up	lnc	2
LINC00261	hsa-miR-212-3p	LOC100132774	up	lnc	2
LINC00261	hsa-miR-301a-3p	LINC00607	up	lnc	2
LINC00261	hsa-miR-339-5p	LINC00340	up	lnc	2
LINC00261	hsa-miR-33a-5p	HOTAIR	up	lnc	2
LINC00261	hsa-miR-455-3p	C6orf147	up	lnc	2
LINC00261	hsa-miR-455-5p	XLOC_l2_015821	up	lnc	1
LINC00261	hsa-miR-502-5p	XLOC_l2_015789	up	lnc	1
LINC00261	hsa-miR-503-5p	XLOC_l2_015206	down	lnc	1
LINC00261	hsa-miR-708-5p	XLOC_l2_015034	up	lnc	1
LINC00261	hsa-miR-7-5p	XLOC_l2_012678	up	lnc	1
LINC00261	hsa-miR-769-5p	XLOC_l2_012159	up	lnc	1
LINC00261	hsa-miR-944	XLOC_l2_011983	up	lnc	1
LINC00330	hsa-miR-106b-5p	XLOC_l2_010661	up	lnc	1
LINC00330	hsa-miR-130b-3p	XLOC_l2_010338	up	lnc	1
LINC00330	hsa-miR-17-3p	XLOC_l2_009469	up	lnc	1
LINC00330	hsa-miR-205-5p	XLOC_014255	up	lnc	1
LINC00330	hsa-miR-301a-3p	XLOC_013457	up	lnc	1
LINC00330	hsa-miR-339-5p	XLOC_013451	up	lnc	1
LINC00330	hsa-miR-431-3p	XLOC_012799	up	lnc	1
LINC00330	hsa-miR-455-5p	XLOC_012682	up	lnc	1
LINC00330	hsa-miR-93-5p	XLOC_012605	up	lnc	1
LINC00340	hsa-miR-139-3p	XLOC_012139	up	lnc	1
LINC00340	hsa-miR-5096	XLOC_011620	down	lnc	1
LINC00472	hsa-miR-106b-5p	XLOC_011550	up	lnc	1
LINC00472	hsa-miR-130b-3p	XLOC_011549	up	lnc	1
LINC00472	hsa-miR-17-3p	XLOC_010434	down	lnc	1
LINC00472	hsa-miR-181a-2-3p	XLOC_009649	up	lnc	1
LINC00472	hsa-miR-194-5p	XLOC_008986	up	lnc	1
LINC00472	hsa-miR-196a-5p	XLOC_008237	up	lnc	1
LINC00472	hsa-miR-196b-5p	XLOC_007596	up	lnc	1
LINC00472	hsa-miR-19a-3p	XLOC_007235	down	lnc	1
LINC00472	hsa-miR-205-3p	XLOC_007124	up	lnc	1
LINC00472	hsa-miR-205-5p	XLOC_005935	up	lnc	1
LINC00472	hsa-miR-21-3p	XLOC_005008	up	lnc	1
LINC00472	hsa-miR-21-5p	XLOC_003915	down	lnc	1
LINC00472	hsa-miR-301a-3p	XLOC_003616	up	lnc	1
LINC00472	hsa-miR-33a-5p	XLOC_003595	down	lnc	1
LINC00472	hsa-miR-424-5p	XLOC_003399	up	lnc	1
LINC00472	hsa-miR-455-3p	XLOC_002344	down	lnc	1
LINC00472	hsa-miR-503-5p	XLOC_002174	up	lnc	1
LINC00472	hsa-miR-708-5p	XLOC_001876	down	lnc	1
LINC00472	hsa-miR-7-5p	XLOC_001851	up	lnc	1
LINC00472	hsa-miR-93-5p	SNAR-H	up	lnc	1
LINC00472	hsa-miR-944	SNAR-G2	up	lnc	1
LINC00473	hsa-miR-18a-5p	SNAR-F	up	lnc	1
LINC00473	hsa-miR-339-3p	SNAR-D	up	lnc	1

LINC00473	hsa-miR-339-5p	SNAR-A3	up	lnc	1
LINC00473	hsa-miR-424-5p	MGC16121	up	lnc	1
LINC00473	hsa-miR-455-3p	LOC572558	down	lnc	1
LINC00473	hsa-miR-502-5p	LOC400655	up	lnc	1
LINC00473	hsa-miR-503-5p	LOC344887	up	lnc	1
LINC00473	hsa-miR-7-5p	LOC286467	up	lnc	1
LINC00478	hsa-miR-106b-5p	LOC100507165	down	lnc	1
LINC00478	hsa-miR-17-3p	LOC100507008	down	lnc	1
LINC00478	hsa-miR-196a-5p	LOC100506673	down	lnc	1
LINC00478	hsa-miR-196b-5p	LOC100505918	up	lnc	1
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LINC00478	hsa-miR-590-5p	LOC100130673	up	lnc	1
LINC00478	hsa-miR-708-5p	LINC00710	down	lnc	1
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LINC00607	hsa-miR-4481	ANO1-AS2	up	lnc	1
LINC00607	hsa-miR-4721	hsa-miR-4721	down	miRNA	49
LINC00640	hsa-miR-4481	hsa-miR-204-5p	down	miRNA	42
LINC00645	hsa-miR-5096	hsa-miR-708-5p	up	miRNA	41
LINC00710	hsa-miR-455-3p	hsa-miR-7-5p	up	miRNA	40
LOC100124692	hsa-miR-106b-5p	hsa-miR-5096	down	miRNA	39
LOC100124692	hsa-miR-181a-2-3p	hsa-miR-424-5p	up	miRNA	38
LOC100124692	hsa-miR-196a-5p	hsa-miR-93-5p	up	miRNA	36
LOC100124692	hsa-miR-205-3p	hsa-miR-205-3p	up	miRNA	36
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LOC100124692	hsa-miR-424-5p	hsa-miR-502-5p	up	miRNA	34
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LOC100124692	hsa-miR-7-5p	hsa-miR-944	up	miRNA	33
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LOC100128252	hsa-miR-181a-2-3p	hsa-miR-301a-3p	up	miRNA	32
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LOC100131825	hsa-miR-212-3p	hsa-miR-339-5p	up	miRNA	26
LOC100131825	hsa-miR-33a-5p	hsa-miR-455-5p	up	miRNA	25
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LOC100131825	hsa-miR-455-5p	hsa-miR-4687-3p	down	miRNA	23

LOC100131825	hsa-miR-502-5p	hsa-miR-21-5p	up	miRNA	23
LOC100131825	hsa-miR-503-5p	hsa-miR-769-5p	up	miRNA	22
LOC100131825	hsa-miR-708-5p	hsa-miR-212-3p	up	miRNA	20
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LOC100132774	hsa-miR-4687-3p	hsa-miR-181a-2-3p	up	miRNA	20
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LOC100216001	hsa-miR-204-5p	hsa-miR-4481	down	miRNA	19
LOC100287314	hsa-miR-4721	hsa-miR-194-5p	up	miRNA	18
LOC100289255	hsa-miR-181a-2-3p	hsa-miR-431-3p	up	miRNA	17
LOC100289255	hsa-miR-19a-3p	hsa-miR-590-5p	up	miRNA	17
LOC100289255	hsa-miR-205-3p	hsa-miR-200c-5p	up	miRNA	17
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LOC100289255	hsa-miR-212-3p	hsa-miR-486-5p	down	miRNA	12
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LOC100289255	hsa-miR-424-5p	hsa-miR-375	down	miRNA	6
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XLOC_002967	hsa-miR-5096
XLOC_003071	hsa-miR-204-5p
XLOC_003071	hsa-miR-4687-3p
XLOC_003146	hsa-miR-4481
XLOC_003146	hsa-miR-4721
XLOC_003223	hsa-miR-424-5p
XLOC_003223	hsa-miR-503-5p
XLOC_003399	hsa-miR-718
XLOC_003475	hsa-miR-212-3p
XLOC_003475	hsa-miR-33a-5p
XLOC_003475	hsa-miR-424-5p
XLOC_003475	hsa-miR-708-5p
XLOC_003475	hsa-miR-944
XLOC_003595	hsa-miR-455-3p
XLOC_003616	hsa-miR-5096
XLOC_003787	hsa-miR-205-3p
XLOC_003787	hsa-miR-455-3p
XLOC_003915	hsa-miR-205-3p
XLOC_004201	hsa-miR-4721
XLOC_004201	hsa-miR-486-5p
XLOC_004423	hsa-miR-205-5p
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XLOC_004423	hsa-miR-708-5p
XLOC_005008	hsa-miR-139-3p
XLOC_005365	hsa-miR-205-5p
XLOC_005365	hsa-miR-339-5p
XLOC_005365	hsa-miR-424-5p
XLOC_005365	hsa-miR-7-5p
XLOC_005365	hsa-miR-769-5p
XLOC_005764	hsa-miR-106b-5p
XLOC_005764	hsa-miR-130b-3p
XLOC_005764	hsa-miR-17-3p
XLOC_005764	hsa-miR-181a-2-3p
XLOC_005764	hsa-miR-194-5p
XLOC_005764	hsa-miR-196a-5p
XLOC_005764	hsa-miR-196b-5p
XLOC_005764	hsa-miR-19a-3p
XLOC_005764	hsa-miR-205-3p
XLOC_005764	hsa-miR-205-5p
XLOC_005764	hsa-miR-21-3p

XLOC_005764	hsa-miR-21-5p
XLOC_005764	hsa-miR-301a-3p
XLOC_005764	hsa-miR-424-5p
XLOC_005764	hsa-miR-455-3p
XLOC_005764	hsa-miR-708-5p
XLOC_005764	hsa-miR-7-5p
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XLOC_005918	hsa-miR-212-3p
XLOC_005918	hsa-miR-455-3p
XLOC_005918	hsa-miR-502-5p
XLOC_005918	hsa-miR-944
XLOC_005935	hsa-miR-4721
XLOC_006043	hsa-miR-194-5p
XLOC_006043	hsa-miR-19a-3p
XLOC_006043	hsa-miR-200c-5p
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XLOC_006043	hsa-miR-424-5p
XLOC_006350	hsa-miR-106b-5p
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XLOC_006350	hsa-miR-18a-5p
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XLOC_006726	hsa-miR-130b-3p
XLOC_006726	hsa-miR-196a-5p
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XLOC_006726	hsa-miR-200c-5p
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XLOC_006726	hsa-miR-708-5p
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XLOC_006726	hsa-miR-944
XLOC_006938	hsa-miR-196a-5p
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XLOC_006938	hsa-miR-33a-5p
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XLOC_006938	hsa-miR-769-5p
XLOC_007038	hsa-miR-17-3p
XLOC_007038	hsa-miR-205-5p
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XLOC_007124	hsa-miR-204-5p
XLOC_007235	hsa-miR-19a-3p
XLOC_007433	hsa-miR-19a-3p
XLOC_007433	hsa-miR-301a-3p
XLOC_007433	hsa-miR-455-5p
XLOC_007433	hsa-miR-502-5p
XLOC_007433	hsa-miR-7-5p
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XLOC_007596	hsa-miR-4721
XLOC_007734	hsa-miR-106b-5p
XLOC_007734	hsa-miR-17-3p
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XLOC_007734	hsa-miR-944
XLOC_008108	hsa-miR-204-5p
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XLOC_008395	hsa-miR-205-3p
XLOC_008395	hsa-miR-21-3p
XLOC_008395	hsa-miR-502-5p
XLOC_008986	hsa-miR-5096
XLOC_009021	hsa-miR-106b-5p
XLOC_009021	hsa-miR-17-3p
XLOC_009021	hsa-miR-194-5p
XLOC_009021	hsa-miR-205-5p
XLOC_009021	hsa-miR-21-3p
XLOC_009021	hsa-miR-339-5p
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XLOC_009124	hsa-miR-486-5p
XLOC_009124	hsa-miR-5096
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XLOC_009378	hsa-miR-4721
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XLOC_009649	hsa-miR-4687-3p
XLOC_009713	hsa-miR-106b-5p
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XLOC_009713	hsa-miR-18a-5p
XLOC_009713	hsa-miR-19a-3p
XLOC_009713	hsa-miR-200c-5p
XLOC_009713	hsa-miR-212-3p
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XLOC_009713	hsa-miR-424-5p
XLOC_009713	hsa-miR-431-3p
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XLOC_010172	hsa-miR-196b-5p
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XLOC_010390	hsa-miR-204-5p
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XLOC_010390	hsa-miR-5096
XLOC_010434	hsa-miR-205-3p
XLOC_010455	hsa-miR-205-5p
XLOC_010455	hsa-miR-502-5p
XLOC_010455	hsa-miR-944
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XLOC_010929	hsa-miR-18a-5p
XLOC_010929	hsa-miR-19a-3p
XLOC_010929	hsa-miR-205-3p
XLOC_010929	hsa-miR-339-5p
XLOC_010929	hsa-miR-424-5p
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XLOC_010929	hsa-miR-93-5p

XLOC_010962	hsa-miR-139-3p
XLOC_010962	hsa-miR-4721
XLOC_011104	hsa-miR-424-5p
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XLOC_011104	hsa-miR-455-3p
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XLOC_011183	hsa-miR-106b-5p
XLOC_011183	hsa-miR-130b-3p
XLOC_011183	hsa-miR-17-3p
XLOC_011183	hsa-miR-181a-2-3p
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XLOC_011183	hsa-miR-200c-5p
XLOC_011183	hsa-miR-205-3p
XLOC_011183	hsa-miR-205-5p
XLOC_011183	hsa-miR-212-3p
XLOC_011183	hsa-miR-21-3p
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XLOC_011294	hsa-miR-455-5p
XLOC_011294	hsa-miR-93-5p
XLOC_011331	hsa-miR-204-5p
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XLOC_011331	hsa-miR-4687-3p
XLOC_011331	hsa-miR-5096
XLOC_011549	hsa-miR-4481
XLOC_011550	hsa-miR-4721
XLOC_011585	hsa-miR-106b-5p
XLOC_011585	hsa-miR-17-3p
XLOC_011585	hsa-miR-18a-5p
XLOC_011585	hsa-miR-194-5p
XLOC_011585	hsa-miR-455-5p

XLOC_011585	hsa-miR-769-5p
XLOC_011585	hsa-miR-93-5p
XLOC_011585	hsa-miR-944
XLOC_011592	hsa-miR-19a-3p
XLOC_011592	hsa-miR-21-3p
XLOC_011592	hsa-miR-33a-5p
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XLOC_011620	hsa-miR-339-5p
XLOC_011728	hsa-miR-4687-3p
XLOC_011728	hsa-miR-4721
XLOC_011728	hsa-miR-5096
XLOC_011815	hsa-miR-200c-5p
XLOC_011815	hsa-miR-205-5p
XLOC_011815	hsa-miR-212-3p
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XLOC_012112	hsa-miR-18a-5p
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XLOC_012112	hsa-miR-7-5p
XLOC_012139	hsa-miR-4721
XLOC_012564	hsa-miR-130b-3p
XLOC_012564	hsa-miR-17-3p
XLOC_012564	hsa-miR-19a-3p
XLOC_012564	hsa-miR-205-3p
XLOC_012564	hsa-miR-339-5p
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XLOC_012564	hsa-miR-944
XLOC_012605	hsa-miR-204-5p
XLOC_012682	hsa-miR-4721
XLOC_012799	hsa-miR-5096
XLOC_012977	hsa-miR-204-5p
XLOC_012977	hsa-miR-4687-3p
XLOC_013451	hsa-miR-5096
XLOC_013457	hsa-miR-204-5p
XLOC_013794	hsa-miR-139-3p
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XLOC_013794	hsa-miR-4687-3p
XLOC_013794	hsa-miR-5096
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XLOC_014219	hsa-miR-204-5p
XLOC_014219	hsa-miR-4481
XLOC_014219	hsa-miR-4687-3p
XLOC_014219	hsa-miR-4721
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XLOC_014255	hsa-miR-4721
XLOC_014508	hsa-miR-130b-3p
XLOC_014508	hsa-miR-17-3p
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XLOC_014508	hsa-miR-708-5p
XLOC_014508	hsa-miR-93-5p
XLOC_014508	hsa-miR-944
XLOC_l2_000297	hsa-miR-139-3p
XLOC_l2_000297	hsa-miR-4481
XLOC_l2_000297	hsa-miR-4687-3p
XLOC_l2_000297	hsa-miR-4721
XLOC_l2_002952	hsa-miR-17-3p
XLOC_l2_002952	hsa-miR-205-5p
XLOC_l2_002952	hsa-miR-212-3p
XLOC_l2_002952	hsa-miR-424-5p
XLOC_l2_002952	hsa-miR-431-3p
XLOC_l2_002952	hsa-miR-455-3p
XLOC_l2_002952	hsa-miR-944
XLOC_l2_003419	hsa-miR-130b-3p
XLOC_l2_003419	hsa-miR-181a-2-3p
XLOC_l2_003419	hsa-miR-196a-5p
XLOC_l2_003419	hsa-miR-196b-5p
XLOC_l2_003419	hsa-miR-19a-3p
XLOC_l2_003419	hsa-miR-205-5p
XLOC_l2_003419	hsa-miR-21-3p
XLOC_l2_003419	hsa-miR-301a-3p
XLOC_l2_003419	hsa-miR-708-5p
XLOC_l2_003419	hsa-miR-944
XLOC_l2_004121	hsa-miR-204-5p
XLOC_l2_004121	hsa-miR-5096
XLOC_l2_005916	hsa-miR-204-5p
XLOC_l2_005916	hsa-miR-4721
XLOC_l2_007566	hsa-miR-204-5p
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XLOC_l2_007986	hsa-miR-181a-2-3p
XLOC_l2_007986	hsa-miR-196a-5p
XLOC_l2_007986	hsa-miR-19a-3p
XLOC_l2_007986	hsa-miR-212-3p
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XLOC_l2_007986	hsa-miR-33a-5p
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XLOC_l2_007986	hsa-miR-708-5p
XLOC_l2_007986	hsa-miR-7-5p
XLOC_l2_008976	hsa-miR-106b-5p
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XLOC_l2_008976	hsa-miR-212-3p
XLOC_l2_008976	hsa-miR-21-5p
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XLOC_l2_008976	hsa-miR-93-5p
XLOC_l2_008991	hsa-miR-106b-5p
XLOC_l2_008991	hsa-miR-196a-5p
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XLOC_l2_009131	hsa-miR-502-5p
XLOC_l2_009136	hsa-miR-196a-5p
XLOC_l2_009136	hsa-miR-196b-5p
XLOC_l2_009136	hsa-miR-205-3p
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XLOC_l2_009136	hsa-miR-708-5p
XLOC_l2_009136	hsa-miR-944
XLOC_l2_009182	hsa-miR-204-5p
XLOC_l2_009182	hsa-miR-4687-3p
XLOC_l2_009182	hsa-miR-4721
XLOC_l2_009182	hsa-miR-5096
XLOC_l2_009441	hsa-miR-139-3p
XLOC_l2_009441	hsa-miR-204-5p
XLOC_l2_009441	hsa-miR-4687-3p
XLOC_l2_009441	hsa-miR-4721
XLOC_l2_009441	hsa-miR-486-5p
XLOC_l2_009441	hsa-miR-5096
XLOC_l2_009442	hsa-miR-139-3p
XLOC_l2_009442	hsa-miR-204-5p
XLOC_l2_009469	hsa-miR-5096
XLOC_l2_009658	hsa-miR-205-3p
XLOC_l2_009658	hsa-miR-205-5p
XLOC_l2_009658	hsa-miR-7-5p
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XLOC_l2_010636	hsa-miR-196a-5p
XLOC_l2_010636	hsa-miR-19a-3p
XLOC_l2_010636	hsa-miR-205-5p
XLOC_l2_010636	hsa-miR-21-5p

XLOC_l2_010636	hsa-miR-424-5p
XLOC_l2_010636	hsa-miR-502-5p
XLOC_l2_010636	hsa-miR-590-5p
XLOC_l2_010661	hsa-miR-4721
XLOC_l2_011983	hsa-miR-4721
XLOC_l2_012159	hsa-miR-204-5p
XLOC_l2_012678	hsa-miR-5096
XLOC_l2_014697	hsa-miR-4481
XLOC_l2_014697	hsa-miR-4687-3p
XLOC_l2_014697	hsa-miR-5096
XLOC_l2_015034	hsa-miR-4721
XLOC_l2_015206	hsa-miR-205-5p
XLOC_l2_015789	hsa-miR-139-3p
XLOC_l2_015800	hsa-miR-424-5p
XLOC_l2_015800	hsa-miR-502-5p
XLOC_l2_015800	hsa-miR-503-5p
XLOC_l2_015821	hsa-miR-718
ZNF300P1	hsa-miR-130b-3p
ZNF300P1	hsa-miR-196a-5p
ZNF300P1	hsa-miR-196b-5p
ZNF300P1	hsa-miR-21-3p
ZNF300P1	hsa-miR-424-5p
ZNF300P1	hsa-miR-431-3p
ZNF300P1	hsa-miR-769-5p
ZNF503-AS1	hsa-miR-194-5p
ZNF503-AS1	hsa-miR-200c-5p
ZNF503-AS1	hsa-miR-205-5p
ZNF503-AS1	hsa-miR-21-3p
ZNF503-AS1	hsa-miR-339-5p
ZNF503-AS1	hsa-miR-455-5p
ZNF503-AS1	hsa-miR-708-5p
ZNF503-AS1	hsa-miR-769-5p
ZNF503-AS1	hsa-miR-93-5p

DE-miRNAs	DEGs or DE-lncRNAs	Node_name	Style	Type	Degree
hsa-miR-130b-3p	ADARB2	TGFBR2	down	gene	7
hsa-miR-130b-3p	AR	PRUNE2	down	gene	6
hsa-miR-130b-3p	ENPP4	RECK	down	gene	5
hsa-miR-130b-3p	ERBB4	RAB9B	down	gene	5
hsa-miR-130b-3p	LINC00571	SLC12A2	down	gene	4
hsa-miR-130b-3p	LOC339524	FGF7	down	gene	4
hsa-miR-130b-3p	LOC400128	FZD4	down	gene	4
hsa-miR-130b-3p	MAGI2-AS3	ERBB4	down	gene	4
hsa-miR-130b-3p	NBEA	CAPN6	down	gene	3
hsa-miR-130b-3p	PRUNE2	DCLK1	down	gene	3
hsa-miR-130b-3p	RAB9B	NOVA1	down	gene	3
hsa-miR-130b-3p	TGFBR2	PRDM16	down	gene	3
hsa-miR-194-5p	FZD4	ZC3H12B	down	gene	2
hsa-miR-194-5p	MAGI2-AS3	AKAP12	down	gene	2
hsa-miR-194-5p	PRDM16	COL14A1	down	gene	2
hsa-miR-196a-5p	COL14A1	NBEA	down	gene	2
hsa-miR-196a-5p	LOC100505976	ENPP4	down	gene	2
hsa-miR-196a-5p	MAGI2-AS3	AR	down	gene	2
hsa-miR-196a-5p	PRUNE2	ADARB2	down	gene	2
hsa-miR-196b-5p	COL14A1	CYBRD1	down	gene	1
hsa-miR-196b-5p	LOC100505976	CLDN10	down	gene	1
hsa-miR-196b-5p	MAGI2-AS3	ATOH8	down	gene	1
hsa-miR-196b-5p	PRUNE2	SYNPO2	down	gene	1
hsa-miR-19a-3p	ERBB4	NTRK3	down	gene	1
hsa-miR-19a-3p	IL6ST	RIMS4	down	gene	1
hsa-miR-19a-3p	LOC100507165	NR2F2	down	gene	1
hsa-miR-19a-3p	LOC339524	SLC7A2	down	gene	1
hsa-miR-19a-3p	LOC400128	PCM1	down	gene	1
hsa-miR-19a-3p	MAGI2-AS3	GFRA1	down	gene	1
hsa-miR-19a-3p	PRUNE2	IL6ST	down	gene	1
hsa-miR-19a-3p	TGFBR2	MAGI2-AS3	down	lnc	14
hsa-miR-205-5p	GFRA1	LOC339524	down	lnc	8
hsa-miR-205-5p	MAGI2-AS3	LOC400128	down	lnc	6
hsa-miR-205-5p	PRDM16	XLOC_l2_008976	down	lnc	5
hsa-miR-205-5p	RAB9B	LOC400550	down	lnc	5
hsa-miR-205-5p	XLOC_l2_009658	PGM5P2	down	lnc	4
hsa-miR-212-3p	FGF7	XLOC_009813	down	lnc	3
hsa-miR-212-3p	LOC400550	LOC145820	down	lnc	3
hsa-miR-212-3p	NOVA1	XLOC_l2_008991	down	lnc	3
hsa-miR-212-3p	XLOC_l2_008991	LOC100505976	down	lnc	3
hsa-miR-21-5p	LOC339524	LINC00571	down	lnc	3
hsa-miR-21-5p	PGM5P2	XLOC_l2_002952	down	lnc	2
hsa-miR-21-5p	RECK	XLOC_009713	down	lnc	2
hsa-miR-21-5p	TGFBR2	XLOC_012564	down	lnc	1
hsa-miR-21-5p	XLOC_l2_008976	XLOC_002344	down	lnc	1
hsa-miR-301a-3p	ADARB2	XLOC_012112	down	lnc	1
hsa-miR-301a-3p	AR	XLOC_007433	down	lnc	1
hsa-miR-301a-3p	ENPP4	XLOC_l2_009658	down	lnc	1
hsa-miR-301a-3p	ERBB4	LOC100507165	down	lnc	1
hsa-miR-301a-3p	LINC00571	hsa-miR-424-5p	up	miRNA	19

hsa-miR-301a-3p	LOC339524	hsa-miR-944	up	miRNA	13
hsa-miR-301a-3p	LOC400128	hsa-miR-301a-3p	up	miRNA	12
hsa-miR-301a-3p	MAGI2-AS3	hsa-miR-130b-3p	up	miRNA	12
hsa-miR-301a-3p	NBEA	hsa-miR-503-5p	up	miRNA	11
hsa-miR-301a-3p	PRUNE2	hsa-miR-33a-5p	up	miRNA	8
hsa-miR-301a-3p	RAB9B	hsa-miR-19a-3p	up	miRNA	8
hsa-miR-301a-3p	TGFBR2	hsa-miR-93-5p	up	miRNA	6
hsa-miR-339-5p	FZD4	hsa-miR-769-5p	up	miRNA	6
hsa-miR-339-5p	MAGI2-AS3	hsa-miR-502-5p	up	miRNA	6
hsa-miR-339-5p	NOVA1	hsa-miR-590-5p	up	miRNA	5
hsa-miR-339-5p	XLOC_l2_008991	hsa-miR-21-5p	up	miRNA	5
hsa-miR-33a-5p	AKAP12	hsa-miR-205-5p	up	miRNA	5
hsa-miR-33a-5p	DCLK1	hsa-miR-7-5p	up	miRNA	4
hsa-miR-33a-5p	LOC145820	hsa-miR-339-5p	up	miRNA	4
hsa-miR-33a-5p	LOC339524	hsa-miR-212-3p	up	miRNA	4
hsa-miR-33a-5p	MAGI2-AS3	hsa-miR-196b-5p	up	miRNA	4
hsa-miR-33a-5p	PGM5P2	hsa-miR-196a-5p	up	miRNA	4
hsa-miR-33a-5p	RECK	hsa-miR-194-5p	up	miRNA	3
hsa-miR-33a-5p	XLOC_l2_008976	hsa-miR-708-5p	up	miRNA	2
hsa-miR-424-5p	AKAP12	hsa-miR-455-3p	up	miRNA	2
hsa-miR-424-5p	CAPN6				
hsa-miR-424-5p	DCLK1				
hsa-miR-424-5p	FGF7				
hsa-miR-424-5p	FZD4				
hsa-miR-424-5p	LOC145820				
hsa-miR-424-5p	LOC400128				
hsa-miR-424-5p	LOC400550				
hsa-miR-424-5p	MAGI2-AS3				
hsa-miR-424-5p	PCM1				
hsa-miR-424-5p	RAB9B				
hsa-miR-424-5p	RECK				
hsa-miR-424-5p	SLC12A2				
hsa-miR-424-5p	SLC7A2				
hsa-miR-424-5p	XLOC_009713				
hsa-miR-424-5p	XLOC_009813				
hsa-miR-424-5p	XLOC_l2_002952				
hsa-miR-424-5p	XLOC_l2_008976				
hsa-miR-424-5p	ZC3H12B				
hsa-miR-455-3p	FGF7				
hsa-miR-455-3p	LOC400550				
hsa-miR-502-5p	LOC339524				
hsa-miR-502-5p	NR2F2				
hsa-miR-502-5p	RIMS4				
hsa-miR-502-5p	TGFBR2				
hsa-miR-502-5p	XLOC_007433				
hsa-miR-502-5p	XLOC_012112				
hsa-miR-503-5p	CAPN6				
hsa-miR-503-5p	FGF7				
hsa-miR-503-5p	LOC400128				
hsa-miR-503-5p	LOC400550				
hsa-miR-503-5p	MAGI2-AS3				

hsa-miR-503-5p	PGM5P2
hsa-miR-503-5p	RAB9B
hsa-miR-503-5p	RECK
hsa-miR-503-5p	SLC12A2
hsa-miR-503-5p	XLOC_009813
hsa-miR-503-5p	XLOC_l2_008976
hsa-miR-590-5p	LOC339524
hsa-miR-590-5p	PGM5P2
hsa-miR-590-5p	RECK
hsa-miR-590-5p	TGFBR2
hsa-miR-590-5p	XLOC_l2_008976
hsa-miR-708-5p	MAGI2-AS3
hsa-miR-708-5p	PRUNE2
hsa-miR-7-5p	ERBB4
hsa-miR-7-5p	LOC400128
hsa-miR-7-5p	SLC12A2
hsa-miR-7-5p	XLOC_009713
hsa-miR-769-5p	LINC00571
hsa-miR-769-5p	LOC400550
hsa-miR-769-5p	MAGI2-AS3
hsa-miR-769-5p	NTRK3
hsa-miR-769-5p	SYNPO2
hsa-miR-769-5p	ZC3H12B
hsa-miR-93-5p	ATOH8
hsa-miR-93-5p	FZD4
hsa-miR-93-5p	LOC100505976
hsa-miR-93-5p	LOC339524
hsa-miR-93-5p	TGFBR2
hsa-miR-93-5p	XLOC_009813
hsa-miR-944	CAPN6
hsa-miR-944	CLDN10
hsa-miR-944	CYBRD1
hsa-miR-944	DCLK1
hsa-miR-944	LOC145820
hsa-miR-944	MAGI2-AS3
hsa-miR-944	NOVA1
hsa-miR-944	PRDM16
hsa-miR-944	SLC12A2
hsa-miR-944	XLOC_002344
hsa-miR-944	XLOC_012564
hsa-miR-944	XLOC_l2_002952
hsa-miR-944	XLOC_l2_008991