Supplementary Tables

Table S1

The sequence of primers used for quantitative reverse transcription-polymerase chain reaction (qRT-PCR)

Gene	Accession Number	Primer ID	Sequence	Tm	Product Size(bp)
ICAM1	NM_000201	ICAM1-F	CCTCACCGTGTACTGGACTCCA	63.7	92
		ICAM1-R	CCTGGCAGCGTAGGGTAAGGT	63.91	
IL6	NM_000600	IL6-F	GTGTGAAAGCAGCAAAGAGGC	60.60	107
		IL6-R	CCAGGCAAGTCTCCTCATTGAA	60.12	
CXCL8	NM_000584	IL8-F	CTCTGTGTGAAGGTGCAGTTTTG	60.49	124
		IL8-R	GGTCCACTCTCAATCACTCTCAG	60.12	
LMNB1	NM_005573	LMNB1-F	ACCATGCCAAACTTGAGAATGC	60.03	93
		LMNB1-R	TCATGCGGCTTTCCATCAGT	60.04	
VEGFA	NM_001025366	VEGFA-F	CTCTGTGTGAAGGTGCAGTTTTG	60.49	81
		VEGFA-R	GGTCCACTCTCAATCACTCTCAG	61.02	

F, Forward

R, Reverse

bp, base pair

Table S2

The datasets employed to find the co-expression network in mesenchymal stem cells with p-value <0.05

Rank	Dataset	Co-Expression Score	Co-Expression P-Value	Description
1	GSE19816.GPL570	0.009513	3.432e-04	Effect of von Willebrand factor on gene expression in HUVECs
2	GSE18662.GPL6244	0.009477	3.046e-04	Expression data of human perirenal adipose tissue-derived mesenchymal stem cells cultured under various conditions
3	GSE8590.GPL570	0.008938	3.411e-04	Overview of gene expression alternatively modulated during the differentiation of human embryonic stem cells (hES)
4	GSE7214.GPL570	0.006772	4.669e-04	Comparison of gene expression data between wild-type and DM1-affected cells
5	GSE33831.GPL570	0.006501	1.584e-03	Mesenchymal Stem Cells Transfer Mitochondria to the Cells with Virtually Absent Mitochondrial Function but Not to the Cells Harboring Pathogenic Mitochondrial DNA Mutations
6	GSE11854.GPL570	0.006129	2.322e-03	In vitro model of somitogenesis using human fibroblasts (kusum-affy-human-554575)
7	GSE7054.GPL96	0.006008	2.447e-03	Identification of oscillatory genes in somitogenesis from functional genomic analysis
8	GSE20126.GPL570	0.005083	1.809e-03	Transcriptome analysis of human Wharton's jelly stem cells
9	GSE18043.GPL570	0.005001	3.177e-03	Priming integrin alpha5 promotes human mesenchymal stromal cell osteoblast differentiation and osteogenesis
10	GSE29270.GPL4133	0.004782	2.769e-03	Molecular Characterization of Breast Carcinoma Associate fibroblasts
11	GSE15543.GPL570	0.004777	2.992e-03	Meta-analysis of gene expression in human islets

				after in vitro expansion.
12	GSE31153.GPL6480	0.004168	5.806e-03	Mesenchymal Stem Cells Promote the Sustained Expression of CD69 on Activated T-lymphocytes: Roles of Canonical and Non-Canonical NF-?B Signaling
13	GSE35133.GPL4133	0.002985	1.398e-02	Development of gene expression signatures for mesenchymal stem cells from neuroblastoma patients
14	GSE31205.GPL6480	0.002877	1.559e-02	A small molecule modulator of prion protein enhances proliferation and engraftment of mesenchymal stem cells and extends their lifespan upon serial passage in culture
15	GSE32531.GPL6480	0.002102	2.817e-02	Patient-derived tumor grafts authentically reflect tumor pathology, growth, metastasis, and disease outcomes (expression)
16	GSE9451.GPL570	0.001954	3.250e-02	Identification of Signature Molecule-Marked Native Mesenchymal Stem Cells
17	GSE28074.GPL13303	0.001493	5.000e-02	A time series study on BMP6 induced osteoblast differentiation of human mesenchymal stem cells (hMSC)
18	GSE23066.GPL570	0.001364	6.000e-02	Comparative gene expression analysis of mesenchymal stem cells (MSC) derived from non-small cell lung cancer (NSCLC) and corresponding normal lung tissue (NLT)
19	GSE24598.GPL570	0.001056	8.000e-02	The human nose harbours a niche of olfactory ecto-mesenchymal stem cells displaying neurogenic and osteogenic properties
20	GSE13491.GPL570	0.001033	7.000e-02	Therapeutic efficacy of human umbilical cord blood-derived mesenchymal stem cells in myocardial repair after infarction
21	GSE10315.GPL570	0.001003	7.000e-02	Multipotent mesenchymal stromal cells: identification of pathways common to TGF?3/BMP2-induced chondrogenesis

22	GSE9764.GPL570	0.001000	8.000e-02	Carcinoma Associated Fibroblast Like Differentiation of Human Mesenchymal Stem Cells
23	GSE14828.GPL571	0.000945	1.100e-01	FGF-2 ENHANCES PROLIFERATION AND DELAYS LOSS OF CHONDROGENIC POTENTIAL IN HUMAN ADULT BONE MARROW-DERIVED MSCs
24	GSE20125.GPL570	0.000743	9.000e-02	Transcriptome analysis of human Wharton's jelly stem cells: meta-analysis
25	GSE23131.GPL4133	0.000470	1.300e-01	Intrinsic differentiation potential of human postnatal MSC, Mab and MAPC reflected in their transcriptome
26	GSE18934.GPL570	0.000283	1.600e-01	Gene expression in fetal mesenchymal stem cells for identification of epitopes suitable for non-invasive isolation
27	GSE17782.GPL1352	0.000176	1.900e-01	Gene Expression Data from Human Mesenchymal Stem Cells with and without TGF-B vs Human Annulus Disc Cells
28	GSE39262.GPL96	0.000172	2.600e-01	Human sarcoma cell lines and untransformed cells
29	GSE9894.GPL570	0.000091	2.400e-01	Specific plasma membrane protein phenotype of culture-amplified and native human bone marrow mesenchymal stem cells
30	GSE21511.GPL5175	0.000091	2.200e-01	EWS-FLI1 reactivates a neural crest stem cell program in human neural crest-derived mesenchymal stem cells
31	GSE22651.GPL6947	0.000074	2.600e-01	Friedreich's Ataxia Induced Pluripotent Stem Cells Recapitulate GAA•TTC Triplet-Repeat Instability
32	GSE26283.GPL6884	0.000063	2.500e-01	Human Mesenchymal Stem Cells Exploit the Immune Response Mediating Chemokines to Impact the Phenotype of Glioblastoma
33	GSE14529.GPL6480	0.000043	2.900e-01	A gene expression signature classifying telomerase and ALT immortalization II
34	GSE31152.GPL6244	0.000038	2.800e-01	Perivascular Human Endometrial Mesenchymal Stem

				Cells Express Pathways Relevant to Self-Renewal, Lineage Specification, and Functional Phenotype
35	GSE18058.GPL6480	0.000032	3.100e-01	Wilms Tumor cells with WT1 mutations have characteristic features of mesenchymal stem cells
36	GSE26946.GPL6244	0.000021	2.900e-01	Expression data from iPS and human ES cells
37	GSE39540.GPL571	0.000015	5.100e-01	A mesenchymal stromal cell gene signature for donor age
38	GSE37711.GPL6244	0.000011	3.700e-01	Expression analysis in parthenogenetic cells through different potency stages
39	GSE30391.GPL570	0.000005	4.000e-01	Expression data from human Wharton's jelly stem cells
40	GSE27915.GPL4133	0.000003	4.400e-01	Transcription profiling of human olfactory ecto-mesenchymal stem cells (hOE-MSCs) from familial dysautonomia (FD) patients with or without kinetin treatment
41	GSE23058.GPL96	0.000001	9.500e-01	Induction of epididymis specific G-protein coupled receptor-64 (GPR64) in Ewing Tumors supports invasiveness and metastatic spread

Table S3

The Datasets were applied to seek the co-expression network in the uterus with a p-value <0.05

Rank	Dataset	Co-Expression Score	Co-Expression P-Value	Description
1	GSE4888.GPL570	0.009602	3.322e-04	Molecular phenotyping of human endometrium
2	GSE35330.GPL570	0.004105	5.057e-03	Cellular senescence reprograms human NK cells to promote vascular remodeling
3	GSE28272.GPL6947	0.003794	7.898e-03	Genome-wide analysis of Prokineticin-1-regulated genes in human term myometrium
4	GSE14722.GPL96	0.002214	3.664e-02	Severe Preeclampsia-Related Changes in Gene Expression at the Maternal-Fetal Interface Include Siglec-6 and Pappalysin-2
5	GSE11115.GPL96	0.000759	1.500e-01	Selective estrogen receptor-beta agonists repress transcription of proinflammatory
6	GSE40182.GPL570	0.000364	1.600e-01	Culturing Cytotrophoblasts Reverses Gene Dysregulation in Preeclampsia Revealing Possible Causes
7	GSE31152.GPL6244	0.000038	2.800e-01	Perivascular Human Endometrial Mesenchymal Stem Cells Express Pathways Relevant to Self-Renewal, Lineage Specification, and Functional Phenotype

Table S4

The Description of the Venn diagram for shared genes

Items	Total	Genes List
Mesenchymal Stem Cells Co-Expression Network VS Uterus Co-Expression Network	504	*CLMP,FAM219A,EDN1,CXCL3,GDF15,HS3ST3A1,BTN2A1,SLC2A5,SOD2,FLJ35024,NR4A2,KIAA1199,PTPN22,DCP1A,GFPT2,PLEKHO1,ITGB1BP2,C4ORF32,RNF217,LAMP3,OTUD4,CHMP1B,NFKB2,TNFRSF10A,TMEM156,ABHD2,MAFK,IL24,BDKRB1,DUSP5,MPP4,CHST11,TMEM200A,SNAPC1,LIF,PHLDA1,ERO1L,PALM2,PDP1,PLD1,NFIL3,CHI3L1,ITPRIPL2,SPRY2,ANKLE2,NRG4,COQ10B,C14ORF182,C3ORF80,SCHIP1,LAMB3,RRAD,TNFAIP6,SOX9,ENTPD7,IER3,TMEM170A,ASAP1,IL1A,RGS20,RELL1,RCAN1,DSE,NFKBIZ,XAF1,MSANTD3,WNT5A,PTGS2,HAS2,EPHX4,C3ORF58,CD83,MARCH3,EAF1,IL4I1,SLC30A7,BMP2,TAC1,GCH1,PIM3,IL15RA,PDE4D,EPSTI1,BCAR3,CSRNP1,ELL,FAM89A,PIK3CD,SLC7A11,ITGA2,null,NR4A3,ZC3H12C,PLOD2,TNFAIP3,AMPD3,MMP1,CA12,MMP12,C3ORF52,IRF2BPL,GTPBP2,CREM,PTGER4,BCL2A1,C4ORF36,FPR1,GNLY,MYO1E,PPARD,PDZK1IP1,UBASH3B,HMOX1,PPP1R15A,MAN1A1,FAM126A,ERAP2,DYRK3,IFNE,MMP3,CSNK1E,ZNF365,ANGPTL4,NAMPT,MMP8,IRAK2,CLIC4,GADD45A,MESDC1,RAD9B,PLAT,CXCL2,BTN2A2,NDRG1,AFAP1,LOC646214,CHI3L2,DDX3Y,MIR31HG,RASA2,PDLIM4,C10ORF113,PDGFA,PRG2,NFE2L3,SLC35E1,KCTD11,TACSTD2,TBX3,FUT11,PMAIP1,IER5,ERO1LB,FZD8,BHLHE40,PHLDA2,HIST1H2BA,RNF24,TNIP1,SH2D1B,GPR84,LRP12,TFPI,FILIP1L,PLEKHA2,NAB1,SLC35G2,CXCL10,IL4R,TGIF1,SLC41A1,SAA4,LOX,RELB,SDE2,IL32,LAMC2,RARRES1,CCDC71L,RASSF8,USP12,ADM,ASPHD2,KLHL5,SPRY4,NUAK2,FNDC3B,FAM100B,WHAMM,CLDN1,NFKB1,IL1B,ADPGK,SKIL,SNTB1,RSPO3,NFKBIA,IGFBP3,ZFAND2A,PFKFB4,NINJ1,IFNAR2,GBP5,MLLT11,TLR2,ELK3,SERPINB3,FAM20C,SEC24A,BCL10,CTTNBP2NL,MMP10,C9ORF89,LEPREL1,ZFY,PHLDB2,PLAUR,BHLHE41,LACTB,TWIST1,MAFF,SIK1,ZNF697,FLJ43663,ARSJ,FAM176A,TP53BP2,HTRA4,TMEM206,C6ORF228,STEAP1,ANKRD37,ESM1,B3GNT5,UGCG,PANX1,BID,TGFB2,PLAU,HSPB8,SLC28A3,TICAM1,SLC25A37,SLC22A4,IRF1,PTPRE,IRF2BP2,GK,GJA1,CCDC50,JAM3,CHSY1,FAM129A,ABL2,RGS3,MAML2,NFATC1,CSGALNACT2,PLK3,ADAMDEC1,ATF3,DGKH,SLC2A13,ST3GAL1,PELO,FAS,TCAM1P,HBEGF,OSMR,CLEC2B,SLC2A3,PTHLH,ATP13A3,FEM1B,TNFRSF11B,TNFSF15,PAG1,C12ORF61,CAPN14,ADORA2A,TRAF3,STAT4,SGCB,TMEM217,ETS2,NCEH1,DCUN1D3,CCRN4L,SH3RF3-AS1,LPXN,NUPL1,EGR1,RIPK2,PPTC7,CDR2,SELE,PPP3CC,BATF3,PIM1,THBD,ARNTL2,ASPH,RRAS2,SLC43A3,BNIP3,IL13RA2,SERPINB2,OAS3,CDK6,CTSS,ZC3H12A,AFF4,MAP*

		3K8,STC1,EGR2,TCP11L1,PDE8A,SMOX,VLDLR,PPP1R3B,SDC4,FHL2,TMEM57,CSF3,JHDM1D,EGLN1,FAM167A,RAB33A,KYNU,SYNJ2,OOEP,CCL20,SPHK1,STX11,GPR176,IFNGR2,NFKBID,GPRC5A,DRAM1,C14ORF43,TGFBR1,NOX4,ABI3BP,PFKFB3,EREG,NDFIP2,IPMK,TRIM69,IL1RAP,SRGN,CASP7,TRIB1,G0S2,UBD,NAGS,GREM1,QPCT,LARP6,SPAG4,TNFRSF12A,EGR3,SERPIND1,TSPAN5,CCL2,LOC284023,C8ORF4,OSGIN2,CCDC93,PSTPIP2,TNFAIP1,CLDN12,DIRAS3,SGPP2,SLC11A2,TMEM158,LATS2,PTPN1,TMEM51,VPS37C,LAYN,TMEM65,PLK2,KIAA0247,SMURF1,PLEK2,TNFSF4,HDX,DUSP6,INHBA,GPR183,HIVEP2,LOXL2,JMJD6,CTSL1,SLC16A6,MMP21,KIR2DL3,AIFM2,FMNL3,C15ORF48,C5ORF62,SLC35E4,UBA6,VNN1,IFI44L,DDIT3,HPCAL1,CCL8,JUNB,TNFSF13B,DOCK10,RNF144B,FADS3,FGF2,SPIRE1,HK2,TMEM71,METRNL,PPIF,SLC16A3,CHIC2,PRR5L,FGFR1OP2,ETS1,CXCL1,MIR155HG,TNFRSF10B,SH2B3,ST6GAL2,TRAF1,SLC41A2,EDEM1,ANPEP,CAMK1D,RHBDF2,WTAP,C2CD2,NRIP3,KLHL29,IL7R,ZNF295,SERPINE1,ZNF470,VCAM1,REL,RSAD2,IL33,PDK1,TNFAIP2,NFKBIE,WISP3,SOWAHC,CXCL5,CDV3,CFB,CXCL6,UPP1,RAB27A,CDCP1,ENC1,MAP2K1,BCL3,FAM65C,ITGB3,STC2,FOXD1,IL11,HSD11B1,ELL2,LGALS8,ANKRD1,F3,CNIH3,SLC9B1,KLF10,ZXDB,CDKN2A,DNER,ETV6,MFHAS1,CEBPB,C18ORF25,GEM,TFPI2,JUN,MLPH,NRG1,ITPRIP,SYTL3,TIFA,ARHGAP22,TNFRSF10D,FOSL1,STK17B,C11ORF96,TTC7B,ELMOD1,HLX,PATL1,MAMLD1,VSTM1,SPOCD1,CSF2,BIRC3,
Mesenchymal Stem Cells Specific Co-Expression Network	827	*C10ORF47,CD44,SAMD4A,TNIP3,APBB2,PFKP,KLHL2,KCNG1,PTPRR,MTHFD2L,SLC35G3,LMAN1,TRIB3,RPA4,SP140L,RPPH1,CYTH1,EPN2,MET,MAX,TNS3,ARF6,LOC643085,MAPKAPK2,LHFPL2,FAM209A,PCGF3,KIAA1919,WDR69,CBX3P2,ACBD3,SCGB1C1,ABR,OSTCP1,UFM1,FAM174A,FBXL14,GATA6,GYPC,C3,ALG2,SLC6A15,F2RL1,EIF1,FRMD5,PTK2,BTN3A1,PLIN2,CD82,GCLM,STARD13,KL,SPZ1,PTP4A2,SBNO2,WDFY2,OBP2A,SLMO1,PDZRN3,ADAM19,DNAH11,EN1,PDCL2,ADAM23,HLA-J,GNA11,CDK17,MT3,PLD6,C14ORF149,NKAIN3,BACE2,AFAP1L1,C10ORF85,PTGES,CDC14C,ZNF70,TPBG,CARS,ALDH1L2,C5ORF46,AHI1,RSPO2,BCAP29,IRX3,SERTAD2,GLYATL2,MAGEB6,SETD8,PRRX1,LMO4,IFI27,C9ORF91,MT1G,MILR1,IDS,LIPI,GRIK1-AS1,CCL26,AHRR,DKFZP434L192,S100A3,S100Z,FTH1,SYTL4,CEBPD,RP11-165H20.1,CATSPER1,CTSB,OAS1,NTM,KLHL10,MEIS1,STOML3,EGF,LXN,KLHL21,BVES,SGK1,TAB2,TANC2,KCTD13,MAP1LC3B,DNAJB4,UGT1A8,DPYSL4,C5ORF56,PLA2G4C,FAM19A1,CA9,B2M,IMPAD1,PPFIBP1,NEGR1,CLK3,MICA,TRIM56*

,CLIP2,NT5E,CD200,CCND1,DNAJC25,NOTCH2,DNAJC1,ASZ1,MEX3D,FLI1,IRS2,HERC3,PTPN14,C16ORF52,CNTN5,LRIG1,POFUT2,SPRYD7,BCL6,DDIT4L,LIMS1,OR2L13,LOC283050,SLC31A2,LRRC8E,MME,TEX26,MYC,SPDYA,FRMD4A,RSPH3,SPIC,KLF9,NLRP9,POU2F2,ARL8A,TAAR9,NNMT,CEP104,STAT1,LRRFIP1,TMEM62,TBC1D10A,TWSG1,ADAMTS6,COLEC12,MYOCD,PRELID2,ELK4,TRIM47,ZNF846,FHOD3,SMURF2,SLC22A3,PARP8,BNC1,NME9,LOC400456,HORMAD2,GPR155,NPAS2,LOC728431,FLJ35776,EIF2AK2,CCL11,PPP1R13L,C1S,OGFRL1,SERPINB8,SIAH2,EXT1,CDRT1,IGF2BP2,C11ORF85,KIAA0408,PARP12,GIPC2,DUSP3,KCTD4,HHEX,PTGER2,PCDHGB7,MT1E,HS3ST3B1,GDNF,OR51B4,C7ORF63,TEP1,YAF2,ENTHD1,ANXA10,HSD17B3,TSKU,DKK3,FAM57A,TAP2,YRDC,EGFR,TMEM136,SRPX2,NKX3-1,CBR3,SNX9,KRT6C,C16ORF74,CSGALNACT1,FLG2,C1ORF204,SLC22A15,CLDN14,SOGA3,LPIN2,GBP1,ZDHHC20,AKAP12,VIMP,NUDT19,OAS2,GLIS3,CD163L1,KLF5,DIRC3,LOC152024,CPEB4,PID1,CAMSAP2,ACSL1,ABL1,MOCOS,SPINK4,SRGAP1,SLC16A4,CDC42EP5,LACC1,BTBD11,C9ORF3,NFE2L1,HLA-G,RACGAP1P,SHB,SYNE1,S100A2,C2CD2L,DMRT2,HRH1,IL17RA,FBXL17,RAB32,CAMK4,FGF5,VMO1,NUMB,RHOQ,FAM40B,GLRX,PF4V1,TOX2,TMEM200B,GNG11,NABP1,RGNEF,ADTRP,ESYT2,FAM9A,FGF10,SEC14L2,ADORA2B,PHEX,CAMTA2,PDE4DIP,TWIST2,SLC39A8,TSLP,DCAF10,ALDH1A3,CCL5,NAV3,MAFG,MNT,KIAA1024,TM4SF1,C17ORF77,MT1F,WDR45L,GINM1,ZNF438,ZCCHC2,LOXL4,PNLIPRP3,NBL1,IMMP2L,RAB11FIP5,MGC27382,ZNF469,SLC7A1,SPSB1,KIRREL3,C3ORF71,SIM2,BNIP3L,CFLAR,PRKCH,TOR4A,STXBP1,SELM,IFIH1,CCBE1,ZFYVE27,ELTD1,SH3RF1,ZIM3,LMCD1,UBE2U,PDCD1LG2,ERICH1,KIAA1462,LOC100130938,ARHGAP24,GPR68,EPAS1,HLA-C,ERRFI1,ZNF804A,PSME2,SNAPC3,CASP4,PMCHL1,GOT1L1,MT2A,EPHB2,KDSR,FAM176C,CYR61,AMIGO2,AKT3,LY96,PROCR,PHF11,TBC1D8B,NDEL1,SLC17A5,MBD1,ACSL4,HSPA12A,ERC1,AOC2,SAT1,XYLT1,C1QTNF1,RBMS1,SLC19A2,PVR,B3GNT2,S1PR3,IFIT3,CKAP4,MYADM,SENP5,WLS,CCL13,BLOC1S4,C6ORF58,WWC2,RGMB,TRAF3IP2,EHF,SUSD5,TRIO,CA13,MSC,C15ORF52,VCPIP1,FHL3,SQRDL,DSP,NXNL2,NGF,AADACL2,TTTY15,SH3RF3,NRP1,CDH13,VEPH1,SLC39A

14,PTPN12,TGM2,GPR137B,ZYG11A,BASP1,MAP3K5,STX2,MOB3C,SQSTM1,LRRC8C,CD55,TXLNG2P,LOC100169752,ZACN,SMAD3,LOC148189,ZNF274,APCDD1L,TBC1D12,TMEM45A,APOL6,SLC16A7,NEDD4,DCBLD2,DPP4,ZBTB38,SLC26A8,FBLIM1,MYH16,CMTM1,RAPH1,LRRC38,RBM24,SOCS6,SLC25A32,EVC2,BTN3A2,BDNF,SLC15A4,FOXC1,ABCA1,DDAH1,NLRP6,DTX3L,ZNF175,BDKRB2,PPAP2C,RNF180,LCN12,AGPAT3,B4GALT1,RAI14,ADCY5,KLHDC7B,TAP1,CFH,NRIP1,NRP2,IFFO2,MED10,ATP6V1G3,CDH2,FAM24B,BCL2L2,ERAP1,ARL4C,PPARG,C19ORF66,PRDM4,CCL7,MT1M,ANTXR2,COL4A3,MYO10,RUNX1,PRKAA1,HOXD4,PDZD9,STBD1,KCTD5,CD58,PARP14,PTGFR,SNX31,TMEM165,MSX2,HHIP-AS1,ABCC4,NR3C1,TMEM171,COX8C,NOTCH2NL,LOC338651,CARD6,SATB2,SLC9A7,BLID,LIMA1,RAB27B,TUFT1,ZXDA,MFSD2A,RP1,WFDC10A,QPCTL,ANO1,ARL10,RAMP1,FRMD6,RAB23,PLA2G4A,FKBP10,MIR100HG,VEGFC,CLDND1,SAMD9L,DDX60,MYCT1,PHC2,ANXA2R,PDILT,MPZL1,BEND7,XRRA1,TSPAN16,C4ORF26,EIF5A2,DUSP1,IRAK3,OLAH,SIPA1L3,CDC42EP2,SLC26A4,C12ORF59,LHX8,CRIM1,ACO1,FLNB,IL15,LIG4,PKNOX1,TMED5,AGTR1,CCDC147,GABRA2,RND3,USP53,PTX3,TMEM106A,ANG,DSG1,VCX,SLC4A7,NEXN-AS1,RIOK3,TES,PRKAG2,SH3TC1,MT1X,BCL2L13,RXFP1,JOSD1,INHBB,ZG16B,UBAP1,DDX4,SPATS2,IL12A,ARNTL,PRNP,SLC9B2,CHMP4B,PVRL2,TLR3,GALNT4,CPED1,MGARP,PRICKLE2,C4ORF22,TRIM58,FAM131A,SUGT1P1,HMGA2,TMEM154,ARHGEF40,SUGT1P3,SLC7A2,FERMT2,SPESP1,SH3RF2,ARSI,HLA-F,NBLA00301,FOSL2,LSM11,PDGFRL,P4HA2,EDIL3,DENND5A,OSCAR,TNC,YPEL4,FAM101A,PPARA,MGLL,RORA,FAP,CDYL2,STX1A,OPTN,HERPUD1,DGKG,SP100,IFI6,BTC,SRXN1,RAI1,BEND2,TAF13,LYG2,PIWIL4,P2RY6,LOC654433,TRIM21,NLRC5,TRIM7,FGF7,KREMEN1,C19ORF12,MXI1,ODF3L1,IL1R2,PION,MT4,ANKRD30B,IFNK,IRGM,IFIT5,FREM3,GHRLOS2,PTGR1,MOK,PXDNL,HCG4,TSHZ3,SSH1,SMC1B,EPG5,PPP4R1L,ULBP2,MSX1,FNDC3A,RIPK1,MICALCL,CAV1,SIX4,SLC20A2,OR5J2,PAQR5,IRX2,THBS2,FOXF1,LRRC7,LTF,IL6ST,ZNF319,ISG20,MRGPRX3,ANKRD29,KIAA1191,HOXB6,GPR146,MFSD4,STEAP2,USP26,MYH7,BTN3A3,IKBKE,HIF1A,TRIM32,HOXA4,PRKY,TUSC1,LOXL3,NFATC2,CAB39,ERP44,CYLD,SCML1,XBP1,FLJ23867,DKK1,DSCR3,RHBDL

		2,C17ORF51,NIPA1,TKTL2,XAGE3,TLR4,IFI35,R GS9,SPATS1,CFHR2,GNB5,B4GALT3,TXNDC11,G BP3,BACH1,C3ORF55,EDARADD,ACTG2,C15OR F37,CCDC135,FGFBP2,WWTR1,LOC100127983,A MOTL1,MTSS1,NOG,HLA-B,C13ORF33,PLEKHS1,ETV5,HOXB9,PARP3,ZNF 800,GSTO1,C12ORF40,RGS10,P2RX4,NIM1,SLC2 5A28,QSOX1,LOC400891,FOXP1,SLC6A9,MLNR, CLDN8,SYT14,PDLIM3,RNF149,FZD6,CHSY3,TC P11L2,SLFN5,HIVEP3,PTP4A1,TCEA3,SHC4,FCR LA,MT1H,PSMA8,RASL11A,KITLG,CPXCR1,EXO SC6,LAMA4,PMEPA1,TMEM185A,FICD,THSD4,H ES4,ZNFX1,FOXO3,APLF,BCAT1,CSRNP2,ST7,P OPDC3,HEATR7A,CYP4F11,UAP1,KCNJ15,TBC1 D9,FBXO32,PGM3,KCNN4,TRIM25,HOXB2,RASA 3,CLCF1,PXK,ABHD6,CD274,PPP4R4,SLC35F4,N PC1,PRKCA,DNAH5,ATP8B1,LRP11,TRIM8,IL7,B TG3,PDGFC,WDR66,VHL,IFI44,SLC25A43,CNST, C2CD4A,UBC,PSMB9,SGPP1,SMCR8,FAM161B,
Uterus Specific Co-Expression Network	854	*PNMA1,PCDHB15,BTG2,RTKN2,SALL1,SLC7A6,CRTAM,M MP7,RDH10,KLHL14,LILRB2,KBTBD8,SYCP3,AQP9,SEMA4 D,CEACAM6,MREG,TET3,SLC12A8,LRRN1,LY6K,LOC64373 3,BLOC1S2,CMPK2,LRFN5,RUNX3,LUZP1,NUDT9P1,C5AR 1,HES1,ALDOC,VGLL3,PRR16,CST7,RRN3P2,SELL,CD38,T NFRSF9,DUSP4,HS3ST1,RBPJ,ISM1,CEP170,CORO2A,APO E,VAT1L,ST8SIA4,FIGF,ASAP1-IT1,ORM1,CHST15,CSNK1A1P1,MAP3K13,KIR2DL4,ARL13 B,CAMTA1,SAMSN1,PXDN,TOX3,HLA-DRA,POLR2J4,ASS1,RGS4,RCSD1,ZNF331,SPTBN1,IRS1,RH OH,BAMBI,PIK3AP1,SNX25,CHST6,PPBP,SLITRK4,RASSF5, QKI,FERMT3,GLIS2,GPR171,CD300A,CD53,KIF2A,LYSMD2 ,PLCXD2,EFHA2,ADAMTS2,STAT5A,MMP27,PAEP,PTPN2, NFYA,KISS1R,PBLD,TIAM1,NDNF,GFI1,SEPT3,KRT17,RBP MS,VAMP4,ARID5A,EML5,SH2D2A,UNC5CL,HP,TAGAP,BC L2L15,HCK,IL22RA2,CXCR7,CSTA,PROX1,BMP6,RAB38,RN F182,RPE65,ARHGAP42,SNAI1,KLHL6,PRSS22,CYP3A5,GTS F1,KIAA0226L,KCTD10,C15ORF43,EHBP1L1,TNF,GRIP1,IL 23A,ATP8B4,SLA,C16ORF87,BEX2,PREX2,LDLR,ZNF254,C1 9ORF59,KLHL28,IRF7,RABGEF1,NAB2,LRP5L,RAB20,SERT AD1,ANTXR1,CASP1,SPP1,MIR17HG,GPR174,FOXR1,IFNA R1,EMR2,ENO2,OSM,APOBEC3A,OLR1,TEX2,LYPD3,TMEM 176A,CTNNB1,GABRE,CHN2,NCK2,CCL4,KDM6B,LAMC3,C LDN10,SOST,LRRC19,USP43,PRF1,STRN3,SLC44A5,FAM10 7B,RHOV,ITK,TDRD9,ITGB8,KLRC4,ERC2,RASGEF1A,CTC FL,EPB41L3,CDKN2B,FCRLB,DOCK4,FAM213A,EOMES,SL C5A3,CHST2,KRT33B,FZD10,KRT34,MCTP2,SOCS3,GPR18, ACPL2,PI3,THEMIS2,CD86,RGS18,ZDBF2,GNA13,MBD2,KI R2DL1,DUSP10,GBP4,TRIP10,HLA-DQA1,KRT86,SLC2A1,CWC25,CCR7,RGS1,UBE2QL1,CR1,P RDM1,GADD45B,AJAP1,SLC38A6,PCDHB6,ASPN,ZNF165,X*

CL1,SLA2,SDS,VASH2,GPC4,IDO1,HAS3,LUM,LINC00340,PARP15,BPGM,HOXD8,C15ORF26,PKIG,ASH1L-AS1,GALNTL4,YWHAG,F2RL2,LRRC32,TSIX,C7ORF29,CCL18,GATA3,INSM1,METTL21CP1,SPPL2A,FOXN3,PNMA2,IL10,ACP5,GPR97,FNIP2,ETV3,TLE3,NARF,ALOX5AP,CYP27B1,PPP3R1,PTBP3,CCNJ,SPRY1,PCDH20,SPTY2D1,NETO1,TNFSF11,ADAM28,GBE1,PRIMA1,SH3BP5,CHD2,NR4A1,METTL21B,IGFBP6,SMAD1,SRD5A1,CFL2,DCBLD1,ZHX2,ARMC9,PSD4,EML4,TTC39B,TMC5,PLEKHB2,IPCEF1,EPYC,CCNT1,PLSCR1,LIPG,HELB,APOLD1,MAPK8,F2R,THBS1,SYTL2,GZMB,TNFRSF21,FCGR3B,TMEM38B,PDE7A,AKR1B1,DAXX,MTFP1,RGS13,CYBB,CYTIP,SLC3A2,MAPK13,MTHFD1L,FER,NID2,AMDHD1,RASGRP3,CD247,SYT11,SOCS1,GALNT14,P2RY10,PJA1,APOC2,GPR56,PDE10A,EN2,VASN,PDE4B,FDCSP,LRRC8B,IL1RN,KIF13A,MLL5,PKIA,TNFRSF18,RAP2A,FLRT3,SLC7A7,LCP2,CA8,MB21D2,SLFN11,ADAMTS3,ARG2,GLS,DDHD1,ADAM8,EIF1AY,ZNF560,ENTPD1,RAPGEF5,LRCH1,SULF1,KBTBD2,C14ORF118,EHD1,PALD1,CDKN1A,LPL,CLEC2D,CPOX,CLEC5A,GJC1,SBSPON,TMEM133,LCP1,HAPLN3,AJUBA,SLC46A3,HILPDA,STAMBPL1,HSBP1L1,MRPS6,RAP2C,MXD1,SNX8,CXORF38,STX1B,C17ORF100,RNMT,ICOS,TNFRSF6B,ABCC1,ASB5,FOSB,KIR3DL3,SLC27A2,FAM46C,REN,KCND2,IGSF6,SLCO5A1,ATP8A2,RFFL,IL12B,ST3GAL5,IL28RA,COL24A1,TPST1,LMO1,DLK1,NOD2,CERS6,SCNN1G,TREM1,N4BP2L1,PITPNC1,TPTE2P6,NCOA7,PLP1,FAM108B1,PIK3R6,SLC39A1,HIST1H1C,STX6,PDK3,B4GALT5,ZNF643,ZBTB25,IL18R1,SERPINA3,TIMD4,KCNJ16,STMN2,USP28,LBH,TMEM88,HAVCR2,CYFIP2,MAP2K3,SMAP2,LPCAT1,AGPAT4-IT1,PIM2,HGF,SYT4,INSIG1,KCNS3,APOC1,THEMIS,TMEM176B,COL12A1,SCARF1,KLRB1,PSD3,ABCA13,BEAN1,C4ORF19,MCTP1,PGK1,AGPAT9,SLC44A4,BAIAP2L1,SPINK1,OTUD1,GNG8,MYO1B,IER2,NMB,WASL,MDFIC,PXT1,FRMD3,AFF1,COL22A1,MALT1,OR8B2,ERI1,SIGLEC17P,FAM5C,HCP5,FOXQ1,DEPDC7,DOCK2,ZSCAN5A,FPR3,ALOX5,PLEK,NLRP3,RAB8B,SAMD3,ST6GALNAC5,GPR116,MAB21L3,AKR1B10,RGS16,STAM,FCGR2B,ARHGEF7,RAB7L1,C12ORF49,MSL3,PRL,EPHA2,RAC2,PROK2,UAP1L1,MEOX1,YOD1,UCHL1,UBE2F,ELOVL3,LAIR2,BTG1,LOC158696,TMEM159,CNTN4,DNAJA4,ARL5B,MUC16,AKIRIN2,REEP3,FGG,TNFSF10,C10ORF55,ZNF8,ARID3A,DUSP2,NCF2,ELF3,ZNF836,GPCPD1,ANKRD28,PI4K2A,CD40,RNF145,LRRC4,ZNF670,NDNL2,TBC1D22B,FGB,ACTL9,LAG3,SIPA1L2,SGIP1,PCDHB11,SERPINB7,DLL1,SERPINA1,DTX1,IL1RL1,SNX10,LIPH,HLA-DQB1,DNAJC3,FAR2,FBXO33,ZBTB43,STAP1,NKG7,EMP1,PVRIG,HDGFRP3,STK38L,MAPK14,TNFRSF4,NPTX2,SNAP25,TIGIT,LYST,KLRK1,STOM,ZNF281,P2RX5,PLEKHA3,MYO1H,C11ORF75,SMAD7,ITGB6,SAMD8,HCG26,SUPT3H,EDNRB,SCD,HSPA6,HS6ST2,CD226,STK32A,STARD3NL,TTC39

	C,CYP7B1,SLC36A4,ARG1,KBTBD11,PCK1,MYO5A,ZC3HAV1L,GNA15,SIPA1L1,TSPAN33,RGCC,AGPAT4,SFMBT2,CDC42,CRLF1,C7ORF57,LRRC15,LINC00473,OTP,SFN,KIR3DL1,GABPB1,CD3D,FCHSD2,DNAJC12,ZNF653,ADSSL1,AMACR,DNAJB6,LOC151162,SCEL,BCOR,KERA,LINC00158,SEMA4B,S100A8,SLC6A14,RAPGEF4,ZNF267,MCL1,FAM26F,RAP2B,CTGF,PTPN7,ELOVL4,CMAHP,RNF165,LYPD1,UBE2D1,CREB5,UTS2D,ANGPT2,FAM227B,CACNA2D3,CCRL2,SIAH1,ZNF333,SPINK2,CPNE8,SLCO4A1,PDPN,GPR82,FASLG,LETM2,ARHGAP31,CD163,UHRF1BP1L,PRKAR2B,TUBA4A,DHX32,INSIG2,PCDHB7,GPR65,IKBIP,SELK,GADD45G,MARCKS,IL2RA,ZNF542,PRG4,DDIT4,ARHGAP9,HTR2B,CCNL1,BCL2L11,INPP4B,AFAP1L2,PCDH11Y,RBP4,USP31,C3ORF17,UBE2R2,CD80,TXK,FLJ10038,ADAMTS1,HIST1H2BG,DGKI,RASGRP1,SLC7A5,GZMA,PIGA,UTS2,LRCH2,GPR115,CYP3A7,PPAPDC1A,MAP3K2,SERPINB4,FOXA1,ARRDC3,SERPINB1,SYK,IGFBP1,HOMER1,ZNF286A,IFNG,FOS,SLC12A1,RHOB,SAP30,LEMD1,MTMR7,TFAP2C,PCDHB10,IFI30,ZNF460,MICB,CST6,UBE2E1,MICAL2,CYP4Z2P,GJB2,KLRC3,TNFAIP8,EFNB2,FGF18,TNFRSF1B,GBP6,JARID2,MSI2,CA2,PCDHB16,KCNK15,LDHC,KLRAP1,STAP2,CDK5R1,BICC1,RASD1,SLC26A9,SLFN13,EID3,TGFA,PROM1,FAM43A,RTP4,CD48,RIT1,FAM210A,FBXW11,ERF,ZDHHC14,CYP26B1,ZSWIM5,LOC100134229,RAB12,TMEM163,UBTD2,GLB1L3,ARC,CD96,PCDHB3,DNAJB5,TMOD1,CTBP2,LOC100129104,DTHD1,OXSR1,FAM196A,FERMT1,MMD,PPFIA1,BRPF3,NEDD9,HIPK2,ZMIZ1,CAB39L,ENPP6,LOC283070,TMEFF1,GPRIN3,MYO1G,ORM2,SPCS2,C1ORF51,EGLN3,EFCAB13,GPX3,SHISA2,CLEC4A,WDR86,IRF8,SOX11,SNORD114-3,GTF2IRD1,PPP1R14C,DUSP16,BCL11A,GPRC5B,TCF7,SAMD9,MMRN1,LCN2,GPR87,PLAC8,C1ORF198,IL20RB,TNFSF9,PPFIA4,KIF21B,ETNK1,CD69,CTHRC1,FAM70A,MCF2L2,ING1,KBTBD12,FMNL2,LRCH3,RBP1,CXCL16,NPL,DCAF12L1,SDCBP2,RND1,POLR3D,CISH,CASK,RNF128,FGD6,USP44,IL2RB,GCNT1,FKBP1A,CYP24A1,SERTAD4-AS1,ANO6,RFTN2,HIPK1,RNF183,PKD2L2,STX4,SEMA4C,KLRD1,SMEK3P,DPYSL3,CSF2RB,RPS6KA3,C1ORF187,SLC16A10,DACT1,NLRP14,ZNRF1,KRT23,USP3,ASB2,N4BP3,HBA2,ADRBK2,S100A9,MMP9,SPOCK1,CTSC,

Table S5

Overlapped co-expressed genes that act as transcription factors

Genes act as TFs
NR4A2,NFKB2,MAFK,NFIL3,SOX9,CSRNP1,NR4A3,CREM,PPARD,NFE2L3,TBX3,BHLHE40,TGIF1,RELB,NFKB1,ELK3,ZFY,BHLHE41,TWIST1,MAFF,ZNF697,IRF1,NFATC1,ATF3,STAT4,ETS2,EGR1,BATF3,ARNTL2,AFF4,EGR2,EGR3,HDX,HIVEP2,DDIT3,JUNB,ETS1,ZNF470,REL,FOXD1,KLF10,ZXDB,ETV6,CEBPB,JUN,FOSL1,HLX