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Supplement Figure 1
Supplement Table 1-7
Supplemental Figure 1. Correlation validation of RT-qPCR and RNA-Seq data. The value was reported as fold change (SMG to Static). Each data point corresponded to a single donor.
Supplementary Table 1. RNA sequencing genes from Venn diagram in Figure 3. All Female High Respondent genes (182 genes).

| Gene symbol | P-value (SMG vs. Static) | Fold change (SMG vs. Static) |
|-------------|--------------------------|-----------------------------|
| ADAMTS3     | 2.42E-02                 | -3.423                      |
| ADAMTSL2    | 3.46E-03                 | -14.869                     |
| ADIRF       | 1.53E-02                 | -3.872                      |
| AKAP72      | 4.05E-02                 | 2.433                       |
| AKR1C1      | 3.69E-02                 | 2.109                       |
| AKR1C3      | 6.44E-03                 | 2.419                       |
| ALDOC       | 2.97E-03                 | -2.759                      |
| ALPK3       | 3.52E-02                 | -2.842                      |
| ANK2        | 5.48E-03                 | 2.328                       |
| APOL6       | 4.64E-02                 | 2.529                       |
| AQP1        | 3.72E-02                 | -2.822                      |
| ATF3        | 1.92E-02                 | 3.623                       |
| BCL2        | 2.90E-02                 | 2.019                       |
| BEST1       | 4.99E-03                 | 2.496                       |
| BIRC3       | 2.25E-02                 | 7.336                       |
| BMP8A       | 3.51E-03                 | 8.510                       |
| BNIP3       | 1.99E-02                 | -2.486                      |
| C15orf48    | 1.71E-02                 | 61.319                      |
| C8orf44-SGK3| 2.47E-02                 | 2.278                       |
| CA9         | 2.20E-03                 | -5.625                      |
| CACNA1D     | 3.91E-02                 | -2.556                      |
| CACNA1H     | 3.05E-03                 | 8.510                       |
| CACNA1I     | 1.51E-02                 | -6.057                      |
| CADM1       | 8.69E-03                 | -2.184                      |
| CADP5       | 3.74E-02                 | -3.099                      |
| CADP52      | 2.35E-02                 | 2.706                       |
| CD36        | 1.07E-02                 | 11.767                      |
| CELSR3      | 3.85E-02                 | -3.168                      |
| CHRFAM7A    | 1.16E-02                 | -2.477                      |
| CHST6       | 3.30E-02                 | -2.097                      |
| CILP2       | 4.28E-02                 | -2.523                      |
| CKB         | 2.64E-02                 | -2.252                      |
| CN1         | 1.26E-02                 | -2.620                      |
| CNTN1       | 2.59E-02                 | -2.803                      |
| COL10A1     | 6.38E-04                 | 6.809                       |
| COL2A1      | 3.33E-03                 | 9.440                       |
| COL9A3      | 2.97E-02                 | 5.210                       |
| CPT1A       | 8.94E-03                 | 3.418                       |
| CRABP2      | 1.31E-02                 | -3.903                      |
| CRTAC1      | 7.94E-03                 | 5.569                       |
| CRYGS       | 4.15E-02                 | 2.371                       |
| CSRP2       | 1.21E-02                 | -2.825                      |
| CTSH        | 1.97E-03                 | 3.566                       |
| CTSS        | 3.54E-02                 | 2.473                       |
| CXCL13      | 3.75E-02                 | 3.633                       |
| CYP26A1     | 4.82E-03                 | -11.812                     |
| CYP4V2      | 1.91E-02                 | 2.225                       |
| Ddit4L      | 3.55E-02                 | -4.238                      |
| DIRAS2      | 4.60E-02                 | 14.613                      |
| DLX5        | 2.98E-02                 | -2.191                      |
| DRD4        | 1.02E-02                 | -3.059                      |
| DSG3        | 4.56E-03                 | 3.857                       |
| DTX3L       | 1.45E-02                 | 2.183                       |
| DUSP10      | 3.40E-02                 | 2.171                       |
| EDNRA       | 1.03E-02                 | 2.218                       |
| EGR2        | 1.93E-02                 | 2.966                       |
| EPGN        | 2.40E-03                 | -4.432                      |
| ERP2        | 1.85E-02                 | 2.118                       |
| EVI2A       | 8.78E-03                 | 2.884                       |
| Gene   | FDR  | p-value |
|--------|------|---------|
| EVI2B  | 4.11E-02 | 2.668   |
| FAM156A| 2.74E-02 | 3.504   |
| FAM81A | 4.55E-02 | 4.847   |
| FBN2   | 3.83E-02 | 3.511   |
| FER1L4 | 2.45E-03 | 4.478   |
| FFA4   | 1.33E-02 | 4.797   |
| FGF1   | 2.03E-02 | 3.112   |
| FILIP1 | 4.21E-02 | 2.661   |
| FOXA2  | 2.17E-02 | 30.869  |
| FRMD7  | 3.25E-02 | 2.217   |
| FRRS1  | 9.03E-03 | 2.426   |
| FRY    | 3.73E-02 | 2.196   |
| FTH1   | 3.41E-02 | 2.248   |
| FTH1P3 | 9.69E-03 | 2.715   |
| GOLGA8T | 2.08E-02 | -2.930  |
| GPNMB  | 5.47E-03 | 2.393   |
| FRMD7  | 3.25E-02 | 11.314  |
| HHIP1  | 8.78E-03 | 2.013   |
| HMOX1  | 3.56E-02 | 2.378   |
| HRCT1  | 4.85E-03 | -2.287  |
| HSPB7  | 8.37E-03 | 2.948   |
| IBSP   | 3.23E-02 | 46.069  |
| IGF2   | 3.22E-02 | -2.918  |
| IGFL3  | 2.43E-02 | -5.124  |
| IHH    | 1.78E-02 | 4.382   |
| ISM1   | 2.31E-02 | -2.629  |
| JAK2   | 3.12E-02 | 2.116   |
| JMJD7-PLA2G4B | 2.24E-02 | -5.267  |
| JPH1   | 3.56E-02 | 5.735   |
| KITLG  | 4.18E-03 | 3.532   |
| KLDR1  | 7.17E-03 | 14.101  |
| KRT75  | 8.11E-04 | 7.575   |
| LOC100130111 | 2.14E-02 | -2.637  |
| LOC112694756 | 7.41E-03 | -2.338  |
| LOXL2  | 1.22E-02 | -2.453  |
| MAP3K5 | 3.15E-02 | 2.371   |
| MBNL3  | 1.54E-02 | 2.342   |
| MFAP5  | 3.16E-02 | -2.743  |
| MIF    | 4.77E-03 | -2.486  |
| MIF-AS1| 2.85E-03 | -2.270  |
| MIR210HG| 5.62E-03 | -2.925  |
| MLPH   | 1.60E-02 | 2.636   |
| MME    | 2.07E-02 | 2.037   |
| MMP10  | 4.41E-03 | 43.752  |
| MYCL   | 2.09E-02 | -3.378  |
| NCAM1  | 4.57E-02 | -2.297  |
| NCR3LG1| 4.71E-02 | 2.035   |
| NDUFA4L2| 3.34E-04 | -4.887  |
| NEDD9  | 4.71E-02 | -2.092  |
| NOS2   | 3.24E-02 | 3.944   |
| NPTX2  | 7.26E-03 | 5.090   |
| NQO1   | 3.87E-02 | 2.266   |
| NRG1   | 4.23E-04 | -7.824  |
| NXPH3  | 1.01E-02 | -2.064  |
| ODAPH  | 1.01E-03 | -21.045 |
| OPCML  | 3.17E-02 | 2.675   |
| OTULINL| 3.59E-02 | -2.048  |
| PALM   | 3.08E-03 | -2.070  |
| PAPPA2 | 3.78E-02 | 3.447   |
| PBK    | 4.87E-02 | 2.064   |
| Gene      | Fold Change | p-value   |
|-----------|-------------|-----------|
| PDE7B     | 4.57E-02    | 2.188     |
| PGK1      | 2.18E-02    | -2.214    |
| PHLD1     | 1.66E-02    | 2.941     |
| PHOSPHO1  | 4.12E-02    | 2.421     |
| PKNOX2    | 4.80E-02    | -2.714    |
| PLIN2     | 4.96E-03    | 2.113     |
| PMAIP1    | 4.07E-02    | 2.707     |
| POBN      | 3.39E-02    | 2.032     |
| PPEF1     | 4.81E-02    | 3.564     |
| PRSS53    | 4.26E-02    | -2.312    |
| RAB11FIP4 | 2.90E-03    | 4.008     |
| RAC3      | 2.82E-02    | -2.219    |
| RAD54B    | 4.10E-02    | 2.552     |
| RASGEF1A  | 1.43E-02    | -3.028    |
| RASSF7    | 1.97E-02    | -2.456    |
| REEP2     | 4.43E-02    | -2.067    |
| RIPOR2    | 3.55E-02    | -2.338    |
| RSP02     | 8.14E-03    | -3.160    |
| RYR2      | 4.66E-02    | -4.324    |
| S100A1    | 3.74E-02    | 3.435     |
| S100A13   | 3.71E-02    | 2.441     |
| SIP1      | 3.36E-02    | 2.409     |
| SIP3      | 2.41E-02    | 2.353     |
| SLC5A2    | 6.04E-03    | -2.620    |
| SCD5      | 4.28E-02    | 2.024     |
| SCIN      | 2.75E-02    | 4.910     |
| SCN2A     | 2.90E-02    | 4.290     |
| SCN3B     | 2.73E-02    | 5.335     |
| SCF       | 1.16E-02    | -2.844    |
| SEMA6A    | 1.98E-02    | -2.165    |
| SFRP2     | 1.46E-02    | -4.896    |
| SHANK2    | 4.42E-03    | -4.253    |
| SLC13A5   | 1.53E-02    | 15.941    |
| SLC20A1   | 7.43E-03    | 2.038     |
| SLC44A2   | 2.71E-02    | 2.044     |
| SMG1P1    | 2.36E-02    | 2.295     |
| SNS15     | 2.00E-02    | 4.463     |
| SOD2      | 1.53E-02    | 2.889     |
| SPINT2    | 4.82E-02    | -2.124    |
| SPP1      | 2.06E-05    | 46.806    |
| STAC      | 1.21E-02    | -3.048    |
| STON2     | 2.81E-03    | 3.681     |
| SUSD4     | 3.61E-02    | 8.985     |
| TFR2      | 1.90E-02    | -5.959    |
| TFRC      | 1.35E-02    | 2.088     |
| TGM2      | 2.67E-02    | 8.481     |
| THBS4     | 2.23E-02    | -3.333    |
| TMEM150C  | 7.29E-03    | 2.513     |
| TMEM200A  | 1.30E-02    | 2.280     |
| TMEM200C  | 2.16E-02    | 9.530     |
| TNFAIP6   | 3.41E-02    | 2.747     |
| TNNT3     | 4.96E-02    | -2.087    |
| TPI1      | 7.75E-03    | -2.139    |
| TRIL      | 2.35E-02    | -2.329    |
| TRIM47    | 4.68E-02    | 2.575     |
| TRIM9     | 4.38E-02    | 2.142     |
| UBE2QL1   | 2.10E-02    | -2.724    |
| VSNL1     | 2.65E-03    | -3.900    |
| ZNF385B   | 1.98E-02    | 3.737     |
Supplementary Table 2. RNA sequencing genes from Venn diagram in Figure 3. All Female Low Respondent genes (176 genes).

| Gene symbol | P-value (SMG vs. Static) | Fold change (SMG vs. Static) |
|-------------|--------------------------|-------------------------------|
| ABCD2       | 3.65E-02                 | 3.287                         |
| ABCG1       | 1.36E-02                 | -5.955                        |
| ACAT2       | 1.74E-02                 | 3.159                         |
| ADAMTS3     | 1.64E-02                 | -2.619                        |
| ADAMTS9-AS2 | 3.67E-02                 | -3.538                        |
| ADSS1       | 3.28E-02                 | -4.551                        |
| AJM1        | 1.88E-02                 | -3.518                        |
| AKR1C1      | 2.40E-02                 | 2.425                         |
| ALPK3       | 1.07E-02                 | -3.621                        |
| APLN        | 1.13E-02                 | -6.595                        |
| APOE        | 5.80E-03                 | -3.696                        |
| APOL6       | 4.98E-03                 | 3.326                         |
| ARHGEF19    | 2.47E-02                 | -2.318                        |
| ATF3        | 4.85E-02                 | 2.654                         |
| B4GALNT4    | 1.48E-02                 | -2.190                        |
| BCKDHA      | 3.62E-02                 | -2.108                        |
| BEST1       | 7.22E-03                 | 2.651                         |
| BMP2        | 1.02E-02                 | 2.322                         |
| BRSK1       | 2.29E-02                 | -2.875                        |
| CACNA1I     | 7.16E-03                 | -19.735                       |
| CAPG        | 2.90E-02                 | 3.368                         |
| CASP1       | 2.82E-02                 | 8.901                         |
| CBR3        | 1.72E-02                 | 2.905                         |
| CCN3        | 1.40E-02                 | -3.517                        |
| CDK15       | 3.72E-02                 | -2.582                        |
| CDKN2A      | 3.41E-02                 | 2.013                         |
| CHST6       | 1.43E-02                 | -2.038                        |
| CILP2       | 2.86E-02                 | -2.803                        |
| CLEC18A     | 4.65E-02                 | -2.210                        |
| CMKLR1      | 1.11E-02                 | 2.467                         |
| COL13A1     | 2.74E-02                 | -2.891                        |
| COMMD3-BMI1 | 3.78E-02                 | 2.347                         |
| CPNE7       | 1.78E-02                 | 10.113                        |
| CPZ         | 1.80E-02                 | -2.137                        |
| CRABP2      | 5.56E-03                 | -3.680                        |
| CRIP1       | 9.30E-04                 | 18.303                        |
| CSRP2       | 9.54E-03                 | -2.089                        |
| CST7        | 4.09E-02                 | 2.966                         |
| CTAGE4      | 4.34E-02                 | -11.451                       |
| CTSH        | 2.73E-02                 | 4.797                         |
| CX3CL1      | 4.32E-02                 | -2.350                        |
| CYP26A1     | 3.51E-02                 | -4.452                        |
| CYP4V2      | 3.49E-02                 | 2.121                         |
| CYP51A1     | 3.69E-02                 | 2.414                         |
| DDT4L       | 2.07E-02                 | -3.080                        |
| DEPP1       | 9.36E-03                 | -7.242                        |
| DHR54L2     | 4.52E-02                 | 3.319                         |
| DLG4        | 3.10E-02                 | -2.262                        |
| DLX5        | 3.22E-02                 | -2.344                        |
| DLX6        | 3.47E-02                 | -2.065                        |
| DMD         | 4.32E-02                 | 2.398                         |
| EGLN3       | 2.05E-03                 | -6.740                        |
| EGR2        | 1.96E-02                 | 2.971                         |
| EN02        | 1.66E-02                 | -3.853                        |
| EPGN        | 2.05E-02                 | -5.078                        |
| EPOR        | 4.90E-02                 | -2.288                        |
| ERMN        | 3.97E-02                 | 5.251                         |
| ETV5        | 1.55E-02                 | 2.200                         |
| EXOSC6      | 2.83E-02                 | 2.392                         |
| F2R         | 3.16E-02                 | 2.518                         |
| Gene   | Expression | Log2 Fold Change |
|--------|------------|-----------------|
| F3     | 6.61E-03   | 2.618           |
| FABP3  | 2.65E-02   | 2.365           |
| FABP4  | 3.04E-03   | 19.322          |
| FAM155A| 6.14E-03   | 9.242           |
| FDFT1  | 4.33E-02   | 2.020           |
| FER1L4 | 1.24E-02   | -11.811         |
| FGF11  | 2.21E-02   | -2.904          |
| FGFR2  | 9.77E-03   | -2.406          |
| FRMPD3 | 2.70E-02   | -3.541          |
| FTH1   | 2.86E-02   | 3.707           |
| FTH1P3 | 5.26E-03   | 3.159           |
| GABBR1 | 4.62E-02   | -2.011          |
| GCK    | 3.03E-02   | -4.284          |
| GCLM   | 3.66E-02   | 2.435           |
| GFRA2  | 1.33E-02   | -2.154          |
| GJA5   | 2.29E-02   | -2.022          |
| GOLGA2P10| 3.28E-02   | -2.100          |
| GOLGA8A| 5.22E-03   | -2.353          |
| GOLGA8O| 1.63E-02   | -2.866          |
| GPR1   | 3.53E-02   | 2.317           |
| GSDMB  | 1.51E-02   | -4.471          |
| GUSBP4 | 4.67E-02   | -2.830          |
| HACD1  | 4.81E-02   | 2.108           |
| HMG1A2 | 3.65E-02   | 2.445           |
| HMGCS1 | 2.53E-02   | 2.097           |
| HOX1   | 4.87E-02   | 3.548           |
| HSD11B2| 3.44E-04   | -22.627         |
| HSD17B7| 2.37E-02   | 2.690           |
| HSF4   | 2.53E-02   | -2.192          |
| HSPA2  | 1.83E-02   | -2.135          |
| ICAM5  | 2.18E-02   | -12.788         |
| IDH1   | 4.81E-02   | 2.068           |
| IFI6   | 4.10E-02   | 2.568           |
| IFIT1  | 8.97E-03   | 2.814           |
| IFIT3  | 7.06E-03   | 4.116           |
| IFIT7  | 1.41E-02   | 4.041           |
| IFN1   | 2.03E-02   | -9.119          |
| INHBB  | 2.61E-02   | -2.884          |
| JPH2   | 3.54E-02   | -4.002          |
| KCNAB1 | 4.34E-02   | -2.388          |
| KCNAB2 | 4.67E-02   | -2.176          |
| KHDRBS3| 3.34E-02   | 2.774           |
| KRT14  | 5.48E-03   | -3.383          |
| LDLR   | 3.71E-03   | 2.732           |
| LFNG   | 2.80E-02   | 2.446           |
| LINCO0641| 1.54E-02   | -3.019          |
| LOC112694756| 5.91E-03   | -2.656         |
| LOC143666| 1.83E-02   | -4.990         |
| LOC154761| 7.76E-03   | -3.515         |
| LRP8   | 2.98E-02   | 2.046           |
| MAPK13 | 3.77E-02   | -3.094          |
| MLPH   | 2.56E-02   | 3.452           |
| MMP3   | 1.98E-02   | -2.593          |
| MOB3B  | 3.14E-02   | -2.180          |
| MSMTP1| 2.34E-02   | 2.598           |
| MTRNR2L2| 1.77E-02   | 2.120           |
| MYLIP  | 5.90E-03   | -2.501          |
| NAGPA  | 2.43E-02   | 2.782           |
| NEDD9  | 2.02E-02   | -2.028          |
| NEFL   | 4.56E-02   | 2.518           |
| NEXN   | 4.62E-02   | 2.757           |
| NKD1   | 9.35E-04   | -3.693          |
| NMRA1L2P| 3.28E-02   | 9.065           |
| NPHE1-P-ACAD11| 4.12E-03   | -13.402        |
| Gene   | Fold Change | Log2 Fold Change |
|--------|-------------|-----------------|
| NQO1   | 5.00E-03    | -3.670          |
| NUDT4B | 3.41E-02    | -2.320          |
| OBSCN  | 2.64E-02    | -3.260          |
| PCDH1  | 1.90E-02    | 3.036           |
| PHLDA2 | 1.51E-02    | 4.256           |
| PIM1   | 3.25E-03    | -2.762          |
| PLCL1  | 9.22E-03    | 4.831           |
| PMAIP1 | 1.49E-02    | 2.690           |
| PFFIA4 | 3.71E-02    | -3.826          |
| PPT2-EGFL8 | 2.74E-02 | -2.695          |
| PRKAA2 | 4.59E-02    | -4.994          |
| PRSS53 | 1.08E-02    | -3.666          |
| PRXL2A | 2.43E-02    | 2.110           |
| PTGS1  | 3.53E-02    | -3.285          |
| RAP1GAP2| 2.99E-02    | -2.743          |
| RAPGEF4| 3.38E-02    | -2.279          |
| RASD2  | 4.84E-02    | -16.994         |
| RASGEF1A| 1.97E-02    | -3.665          |
| RDH10  | 3.71E-02    | 2.214           |
| RNA5SN2| 3.45E-02    | 3.073           |
| RSPO2  | 9.70E-03    | -3.462          |
| SAMHD1 | 4.54E-02    | 3.427           |
| SDHA1  | 2.77E-02    | -2.230          |
| SELENOP| 5.65E-03    | 2.824           |
| SERPIN1| 4.39E-02    | 3.070           |
| SH3D21 | 1.67E-02    | -5.221          |
| SLC20A1| 2.73E-03    | 2.886           |
| SLC22A17| 3.06E-02   | -2.165          |
| SLC24A2| 2.21E-02    | 2.515           |
| SLC2A12| 3.45E-03    | -3.450          |
| SLC2A3 | 4.99E-02    | -2.240          |
| SLC2A5 | 2.34E-02    | -9.276          |
| SLC31A2| 3.04E-02    | 2.397           |
| SMAGP  | 4.89E-02    | 2.249           |
| SMIM4  | 4.78E-02    | 2.261           |
| SP110  | 3.71E-02    | 2.014           |
| SQSTM1 | 4.94E-02    | 2.052           |
| STAC   | 2.87E-02    | -2.684          |
| STARD4-AS1| 1.78E-02 | -2.821          |
| SYNPO  | 9.86E-04    | -3.750          |
| TALAM1 | 3.82E-03    | -4.053          |
| TFRC   | 4.99E-03    | 2.327           |
| THBS3  | 1.49E-02    | -2.050          |
| TMEM154| 3.54E-02    | 2.044           |
| TNFRSF9| 3.32E-02    | -2.470          |
| TPP1   | 1.23E-02    | -3.838          |
| TRIM47 | 2.29E-02    | 3.006           |
| VEGFA  | 3.13E-02    | -9.211          |
| WSB1   | 2.66E-02    | -2.130          |
| WWC1   | 3.60E-02    | -2.979          |
| ZDHHC23| 2.22E-02    | 3.353           |
| ZNF395 | 4.69E-02    | -2.798          |
Supplementary Table 3. RNA sequencing genes from Venn diagram in Figure 3. All Male genes (207 genes).

| Gene symbol | P-value (SMG vs. Static) | Fold change (SMG vs. Static) |
|-------------|--------------------------|-----------------------------|
| ACAT2       | 1.21E-02                 | 2.436                       |
| ACSM3       | 4.00E-02                 | -2.172                      |
| ADAMTS7     | 4.12E-03                 | 2.517                       |
| ADAMTS9-AS2 | 3.28E-03                 | -4.522                      |
| ADGRL4      | 4.61E-02                 | 2.176                       |
| ADM         | 8.01E-03                 | -2.538                      |
| ADRA2A      | 3.17E-03                 | 2.363                       |
| ADSS1       | 7.16E-04                 | -4.618                      |
| AGAP11      | 1.12E-02                 | -2.665                      |
| AK4         | 1.56E-02                 | -2.866                      |
| ALDOC       | 2.88E-02                 | -2.583                      |
| ALPK3       | 1.83E-02                 | -2.318                      |
| ANGPTL6     | 4.60E-02                 | -7.153                      |
| ANKRD29     | 4.81E-02                 | 2.330                       |
| APLN        | 1.64E-02                 | -4.454                      |
| ARRDC4      | 2.69E-02                 | -2.209                      |
| BCL6B       | 1.14E-02                 | -3.886                      |
| BEST1       | 9.19E-03                 | 2.120                       |
| BEST4       | 4.95E-02                 | -4.436                      |
| BNIP3       | 3.54E-02                 | -3.226                      |
| C3          | 1.96E-02                 | -4.004                      |
| C3AR1       | 5.82E-03                 | 2.951                       |
| CA9         | 1.80E-02                 | -14.504                     |
| CACNA1H     | 4.38E-02                 | -13.636                     |
| CAPG        | 1.04E-03                 | 3.120                       |
| CCDC80      | 1.96E-02                 | -2.031                      |
| CCN1        | 8.33E-03                 | -2.043                      |
| CH13L2      | 3.88E-02                 | -2.532                      |
| CHRNA9      | 4.92E-02                 | 4.915                       |
| CILP2       | 3.89E-02                 | -3.176                      |
| CLEC3B      | 2.34E-02                 | -4.533                      |
| CLMAT3      | 1.90E-02                 | -2.352                      |
| CLU         | 6.69E-03                 | -2.423                      |
| COBL        | 1.45E-02                 | 8.192                       |
| CPNE7       | 3.16E-02                 | 9.510                       |
| CPT1A       | 1.22E-02                 | 2.356                       |
| CRABP2      | 3.84E-02                 | -2.766                      |
| CRIP1       | 1.94E-03                 | 11.749                      |
| CFN1        | 8.94E-03                 | 2.250                       |
| CYP26B1     | 1.91E-02                 | -3.139                      |
| DDIT4L      | 3.52E-02                 | -4.577                      |
| DEPP1       | 1.78E-03                 | -4.661                      |
| DHCR7       | 2.38E-02                 | 2.003                       |
| DHRS13      | 3.06E-02                 | -2.392                      |
| DHRS3       | 3.98E-02                 | -5.452                      |
| DRD4        | 4.77E-03                 | -2.415                      |
| DUSP27      | 2.44E-02                 | 3.875                       |
| DUSP6       | 1.75E-02                 | 2.547                       |
| EGLN3       | 3.97E-03                 | -10.470                     |
| EGR2        | 1.22E-02                 | 2.120                       |
| ELOVL3      | 2.33E-02                 | -2.451                      |
| EPB41L4A    | 4.00E-02                 | -2.872                      |
| EPB41L4A-AS1| 1.48E-02                 | -2.159                      |
| EPGN        | 4.91E-02                 | -4.134                      |
| ETV1        | 4.59E-02                 | 2.006                       |
| EYA4        | 5.38E-03                 | 2.066                       |
| FAM155A     | 4.62E-03                 | 7.286                       |
| FBLN7       | 4.86E-03                 | -2.874                      |
| FNDC10      | 5.11E-03                 | 2.579                       |
| Gene       | FC  | p-value         |
|------------|-----|----------------|
| FRMPD3    | 2.74E-02 | -2.908         |
| FTH1      | 2.07E-02 | 2.289          |
| FTH1P3    | 1.75E-02 | 2.255          |
| GCLM       | 1.25E-02 | 2.281          |
| GDF15     | 4.53E-02 | 2.256          |
| GDF5      | 1.24E-02 | -2.674         |
| GET1-SH3BGR | 3.60E-02 | -2.070         |
| GMPR      | 4.34E-02 | -2.363         |
| GPR1      | 7.46E-03 | 2.659          |
| GPR146    | 4.90E-02 | -2.594         |
| GPR183    | 3.16E-02 | -3.270         |
| GPR68     | 3.51E-02 | 2.282          |
| H19       | 4.60E-02 | -10.826        |
| HILPDA    | 3.34E-02 | -5.886         |
| HK2       | 2.66E-02 | -3.211         |
| HMG1A2    | 4.18E-02 | 2.043          |
| HRT1      | 1.38E-02 | -4.145         |
| HSD11B2   | 2.39E-03 | -14.326        |
| HSD17B7   | 1.89E-02 | 2.246          |
| HSPA2     | 7.51E-02 | -2.082         |
| HTR7      | 2.72E-03 | 3.722          |
| IGF2      | 1.39E-02 | -7.089         |
| IGF3L3    | 3.66E-02 | -3.067         |
| IGFN1     | 3.27E-02 | -9.087         |
| INHBB     | 4.71E-02 | -2.087         |
| IRX3      | 3.17E-02 | 2.599          |
| ISSL2     | 4.79E-02 | 2.875          |
| ITGA3     | 1.77E-03 | 3.091          |
| ITPR3     | 7.56E-05 | 2.737          |
| ITPRIP    | 3.38E-02 | 2.314          |
| JAM2      | 4.54E-02 | -2.390         |
| JPH2      | 1.19E-02 | -4.429         |
| JPH3      | 1.09E-03 | 2.241          |
| KCNAB1    | 2.17E-03 | -2.305         |
| KCNC4     | 2.85E-03 | 2.083          |
| KCNH1     | 3.31E-02 | 2.185          |
| KLHL4     | 1.73E-02 | 2.139          |
| KLK12     | 6.04E-03 | 7.030          |
| LDLR      | 2.20E-03 | 2.290          |
| LEFTY2    | 1.69E-02 | -3.845         |
| LINC00641 | 1.80E-02 | 2.168          |
| LINC00856 | 1.39E-02 | 2.982          |
| LINC02067 | 1.23E-02 | -2.262         |
| LOC100310756 | 2.61E-02 | -2.016         |
| LOC100507412 | 2.21E-02 | 2.026         |
| LOC112694756 | 2.60E-02 | -2.002         |
| LOC154761 | 7.23E-03 | -2.343         |
| MAPK13    | 2.17E-03 | -2.619         |
| MCOLN3    | 1.68E-03 | 3.561          |
| MFA5      | 1.69E-02 | -2.076         |
| MICB      | 1.10E-02 | 2.890          |
| MIR210HG  | 3.86E-02 | -3.477         |
| MLPH      | 6.53E-06 | 4.039          |
| MPP15     | 3.47E-03 | 2.912          |
| MPP23A    | 1.50E-02 | -5.482         |
| MPP23B    | 6.83E-04 | -5.214         |
| MPP5      | 4.87E-03 | -7.375         |
| MSTO2P    | 4.67E-02 | 2.720          |
| MYLIP     | 8.02E-03 | -2.506         |
| NCR5LG1   | 1.07E-03 | 2.016          |
| NDUFA4L2  | 2.73E-02 | -4.242         |
| NEXMIF    | 4.47E-02 | -2.815         |
| NFASC     | 1.18E-03 | 2.071          |
| NOL3      | 3.62E-02 | -2.693         |
| Gene   | Value 1  | Value 2  |
|--------|---------|---------|
| NPL    | 1.77E-02| 2.364   |
| NPR3   | 3.28E-02| -3.190  |
| NPTX1  | 2.93E-02| -16.142 |
| NQO1   | 6.01E-03| 2.576   |
| NR2F1  | 1.00E-02| 2.205   |
| NRN1   | 2.41E-02| -2.417  |
| NTM    | 2.71E-02| 2.421   |
| NTNG2  | 1.29E-02| 2.026   |
| NXPH4  | 4.93E-02| -3.021  |
| NYAP1  | 2.04E-02| -3.472  |
| OLFML2A| 1.33E-02| 4.798   |
| PAK3   | 2.72E-02| 2.321   |
| PCDH1  | 5.22E-03| 3.298   |
| PDK1   | 1.15E-02| -3.640  |
| PER2   | 1.71E-02| -2.280  |
| PFKFB3 | 3.03E-03| -2.294  |
| PGAM2  | 1.69E-02| -2.407  |
| PHLD A2| 1.43E-02| 2.746   |
| PIA NP | 1.24E-02| -3.019  |
| PIK3A1 | 5.80E-03| -2.177  |
| PLAT   | 7.19E-03| 2.326   |
| PMAIP1 | 3.81E-02| 2.281   |
| PPFA1  | 3.67E-02| -2.824  |
| PRELJD2| 8.51E-03| -2.986  |
| PRELP  | 3.63E-02| -2.487  |
| PTCHD4 | 2.18E-03| 3.551   |
| PTGS1  | 5.26E-03| -3.616  |
| RAB20  | 3.47E-02| -2.560  |
| RASD2  | 3.15E-02| -3.822  |
| RASEF  | 8.76E-03| 4.666   |
| RASL10B| 1.06E-02| -2.643  |
| RASSF4 | 1.59E-02| -2.971  |
| RGL3   | 6.98E-03| -2.193  |
| RHOD   | 7.29E-03| 2.658   |
| RIPOR2 | 1.29E-02| -2.558  |
| RNF125 | 3.46E-02| 2.191   |
| RSPO2  | 6.30E-04| -4.260  |
| SBSPON | 3.88E-02| -10.479 |
| SCN2A  | 3.99E-02| 3.384   |
| SFTT   | 2.10E-02| -2.566  |
| SDSL   | 2.51E-02| 2.052   |
| SEMA3B | 1.63E-02| -3.523  |
| SERINC2| 5.78E-03| 2.159   |
| SERPINA5| 6.66E-04| -2.491  |
| SGCA   | 1.68E-02| -3.549  |
| SLC20A1| 5.27E-03| 2.493   |
| SLC22A3| 1.76E-02| 4.193   |
| SLC24A2| 9.85E-03| 9.551   |
| SLC2A1 | 1.19E-02| -2.313  |
| SLC2A5 | 2.09E-02| -8.837  |
| SLC2A6 | 1.23E-02| 2.259   |
| SLC31A2| 1.73E-04| 2.106   |
| SLC4A11| 6.78E-03| 4.120   |
| SLC5A12| 2.38E-02| -5.714  |
| SLC8A1 | 1.23E-02| -2.898  |
| SMOC2  | 7.96E-03| -2.750  |
| SNORD141A| 3.48E-02| -2.033  |
| SNORD141B| 3.48E-02| -2.033  |
| SPAG4  | 3.19E-02| -3.540  |
| SPPK1  | 5.15E-03| 2.962   |
| SPPK3  | 2.49E-02| -2.231  |
| ST6GALNAC3| 4.34E-02| -3.460  |
| STAC   | 1.17E-02| -3.198  |
| SYNPO  | 1.56E-02| -3.781  |
| Gene   | Fold Change | LFC    |
|--------|-------------|--------|
| SYT12  | 2.58E-02    | 3.325  |
| TCAF2  | 1.98E-02    | -2.224 |
| TESK2  | 8.68E-03    | -2.020 |
| TET1   | 9.06E-03    | -2.491 |
| TFRC   | 2.02E-02    | 2.052  |
| THSD1  | 1.76E-03    | 3.145  |
| TRIM29 | 9.25E-03    | 2.677  |
| TRIM47 | 1.17E-02    | 2.126  |
| TUBB2B | 2.01E-02    | -4.491 |
| TXNIP  | 1.78E-02    | -2.316 |
| VAV3   | 4.52E-02    | 2.006  |
| VSIR   | 8.71E-03    | -2.735 |
| VW1A1  | 1.53E-03    | -2.893 |
| WHRN   | 3.36E-02    | 2.246  |
| WNT9A  | 6.75E-03    | 3.317  |
| WWC1   | 3.86E-02    | -3.058 |
| ZDHHC2 | 1.03E-02    | 3.073  |
| ZDHHC23| 2.97E-02    | 2.148  |
| ZNF185 | 3.90E-02    | -2.972 |
| ZNF395 | 7.82E-04    | -3.005 |
Supplementary Table 4. RNA sequencing genes from Venn diagram in Figure 3. Female High Respondents AND Female Low Respondents genes (34 genes).

| Gene symbol |     |
|-------------|-----|
| ADAMTS3     |     |
| AKR1C1      |     |
| ALPK3       |     |
| APOL6       |     |
| ATF3        |     |
| BEST1       |     |
| CACNA1I     |     |
| CHST6       |     |
| CILP2       |     |
| CRABP2      |     |
| CSRP2       |     |
| CTSH        |     |
| CYP26A1     |     |
| CYP4V2      |     |
| DDIT4L      |     |
| DLX5        |     |
| EGR2        |     |
| EPGN        |     |
| FER1L4      |     |
| FTH1        |     |
| FTH1P3      |     |
| HMOX1       |     |
| LOC112694756|     |
| MLPH        |     |
| NEDD9       |     |
| NQO1        |     |
| PRSS53      |     |
| RASGEF1A    |     |
| RSPO2       |     |
| SLC20A1     |     |
| STAC        |     |
| TFRC        |     |
| TRIM47      |     |
Supplementary Table 5. RNA sequencing genes from Venn diagram in Figure 3. Female High Respondents AND Male genes (36 genes).

| Gene symbol | ALDOC | ALPK3 | BEST1 | BNIP3 | CAP9 | CACNA1H | CILP2 | CPT1A | CRABP2 | Ddit4L | DRD4 | EGR2 | EPGN | FTH1 | FTH1P3 | H19 | HRCT1 | IGF2 | IGFL3 | KLRD1 | LOC112694756 | MFAP5 | MIR210HG | MLPH | NCR3LG1 | Ndufa4L2 | NQO1 | PMAIP1 | RIPOR2 | RSPO2 | SCN2A | SCT | SLC20A1 | STAC | TFRC | TRIM47 |
|-------------|-------|-------|-------|-------|------|---------|-------|-------|--------|--------|------|------|------|------|-------|-----|-------|------|------|-------|----------------|-------|----------|------|---------|--------|------|--------|--------|------|-------|------|-----|--------|------|------|-------|
Supplementary Table 6. RNA sequencing genes from Venn diagram in Figure 3. Female Low Respondents AND Male genes (58 genes).

| Gene symbol | Gene symbol |
|-------------|-------------|
| ACAT2       | ADAMTS9-AS2 |
| ADSS1       | ALPK3       |
| APLN        | BEST1       |
| CACNA1I     | CAPG        |
| CILP2       | CPNE7       |
| CRABP2      | CRIP1       |
| DDIT4L      | DEPP1       |
| EGLN3       | EGR2        |
| EPGN        | FAM155A     |
| FRMPD3      | FTH1        |
| FTH1P3      | GCLM        |
| GPR1        | HMGA2       |
| HSD11B2     | HSD17B7     |
| HSPA2       | IGF1N1      |
| INHBB       | JPH2        |
| KCNAB1      | LDLR        |
| LINC00641   | LOC112694756|
| LOC154761   | MAPK13      |
| MLPH        | MMP3        |
| MYLIP       | NQO1        |
| PCDH1       | PHLDA2      |
| PMAIP1      | PPIA1A4     |
| PTGS1       | RASD2       |
| RSPO2       | SLC20A1     |
| SLC24A2     | SLC2A5      |
| SLC31A2     | STAC        |
| TFRC        | SYNPO       |
| TRIM47      | WWC1        |
| ZDHHC23     | ZNF395      |
Supplementary Table 7. RNA sequencing genes from Venn diagram in Figure 3. Female High Respondents AND Female Low Respondents AND Male genes (19 genes).

| Gene symbol | ALPK3      | BEST1      | CACNA1H   | CILP2      | CRABP2   | DDIT4L   | EGR2      | EPGN      | FTH1      | FTH1P3   | LOC112694756 | MLPH      | NQO1      | PMAIP1    | RSPO2   | SLC20A1   | STAC      | TFRC     | TRIM47   |
|-------------|------------|------------|-----------|------------|----------|----------|-----------|-----------|-----------|----------|----------------|-----------|-----------|-----------|---------|----------|-----------|---------|---------|---------|
