**Supplementary Files**

Supplementary File 1A: Description of tissue samples

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Week | Sample | Week + days | Application of  mifepristone | Time [mm:ss] |
| 8 PC | I | 7 + 6 | No | 07:50 |
| II | 8 + 4 | No | 12:20 |
| 10 PC | III | 9 + 5 | No | 11:00 |
| IV | 10 + 0 | No | 09:10 |
| 12 PC | V | 11 + 2 | Yes | 13:40 |
| VI | 11 + 6 | Yes | 16:40 |

Supplementary File 1B: RNA quality measurements

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week | Sample | Side | Quality measurements (RUB) | | | Quality measurements (GATC) | | | | |
| Concen-tration [ng/µl] | Purity [A260/A280] | Amount of RNA [µg] | | Concen-tration [ng/µl] | Amount of RNA [µg] | RIN | rRNA ratio [28S/18S] | |
| 8  PC | I | Left | 38.25 | 1.97 | 1.61 | | 32.30 | 1.36\* | 5.6 | 2.1 | |
| Right | 27.82 | 2.00 | 1.17 | | 28.45 | 1.18\* | 4.7 | 2.0 | |
| II | Left | 119.53 | 1.99 | 5.02 | | 79.33 | 3.34 | 6.8 | 1.6 | |
| Right | 72.12 | 1.98 | 3.03 | | 84.24 | 3.54 | 7.3 | 2.3 | |
| 10 PC | III | Left | 58.68 | 2.00 | 2.46 | | 53.30 | 2.24 | 3.5 | 1.6 | |
| Right | 51.37 | 2.01 | 2.16 | | 36.12 | 1.52\* | 4.6 | 1.5 | |
| IV | Left | 249.58 | 2.04 | 10.48 | | 201.07 | 8.44 | 6.6 | 1.5 | |
| Right | 149.96 | 1.99 | 6.30 | | 165.39 | 6.94 | 6.1 | 1.7 | |
| 12 PC | V | Left | 92.51 | 2.00 | 3.89 | | 100.26 | 4.22 | 2.8 | 1.7 | |
| Right | 47.55 | 1.98 | 2.00 | | 58.74 | 2.46 | 4.3 | 1.9 | |
| VI\*\* | Left | 49.78 | 1.85 | 2.09 | | 32.30 | 1.36\* | 1.1 | 0 | |
| Right | 86.67 | 1.96 | 3.64 | | 28.45 | 1.18\* | 1.1 | 0 | |

\* The amount of RNA was not sufficient for mRNA and microRNA sequencing, so no microRNA sequencing was performed in order to enable mRNA sequencing.

\*\* Sample VI did not pass quality control and was not further processed

Supplementary File 1C: DNA quality measurements

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Week | Sample | Side | Concentration [ng/µl] | Purity [A260/A280] | Amount of DNA [µg] |
| 8  PC | I | Left | 179.75 | 1.85 | 2.69 |
| Right | 209.08 | 1.87 | 3.14 |
| II | Left | 321.72 | 1.87 | 3.22 |
| Right | 272.37 | 1.86 | 2.72 |
| 10  PC | III | Left | 451.98 | 1.86 | 4.52 |
| Right | 327.73 | 1.86 | 3.28 |
| IV | Left | 485.38 | 1.85 | 4.85 |
| Right | 242.45 | 1.87 | 3.64 |
| 12  PC | V | Left | 496.01 | 1.88 | 4.96 |
| Right | 240.91 | 1.89 | 2.41 |

Supplementary File 1D: RNA read statistics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Week | Sample | Side | Total Reads | QC passed reads | % Passed | Mapped reads | % Mapped |
| 8  PC | I | Left | 138,364,454 | 133,215,718 | 96.3 | 128,422,198 | 96.4 |
| Right | 156,787,326 | 148,278,816 | 94.6 | 143,107,356 | 96.5 |
| II | Left | 153,431,660 | 145,032,810 | 94.5 | 141,227,019 | 97.4 |
| Right | 167,209,892 | 161,440,222 | 96.5 | 152,747,761 | 94.6 |
| 10 PC | III | Left | 124,939,458 | 120,500,696 | 96.4 | 115,757,503 | 96.1 |
| Right | 170,552,644 | 163,290,090 | 95.7 | 158,166,665 | 96.9 |
| IV | Left | 154,704,654 | 148,006,032 | 95.7 | 143,653,484 | 97.1 |
| Right | 130,817,636 | 125,353,002 | 95.8 | 121,841,246 | 97.2 |
| 12 PC | V | Left | 95,466,628 | 92,592,902 | 97.0 | 24,356,396 | 26.3 |
| Right | 139,152,284 | 134,489,354 | 96.6 | 35,694,631 | 26.5 |

Supplementary File 1E: DNA read statistics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Week | Sample | Side | Total Reads | QC passed reads | % Passed | Mapped reads | % Mapped |
| 8  PC | I | Left | 157,131,898 | 135,957,542 | 86.5 | 98,904,834 | 72.7 |
| Right | 116,438,904 | 98,145,354 | 84.3 | 71,949,168 | 73.3 |
| II | Left | 144,313,254 | 134,707,790 | 93.3 | 100,057,784 | 74.3 |
| Right | 149,788,924 | 140,866,420 | 94.0 | 107,706,526 | 76.5 |
| 10 PC | III | Left | 190,838,816 | 178,029,952 | 93.3 | 130,557,346 | 73.3 |
| Right | 169,157,704 | 157,992,478 | 93.4 | 119,759,046 | 75.8 |
| IV | Left | 133,073,726 | 122,808,294 | 92.3 | 94,880,640 | 77.3 |
| Right | 151,718,790 | 140,366,174 | 92.5 | 42,861,510 | 30.5 |
| 12 PC | V | Left | 219,803,208 | 206,451,844 | 93.9 | 156,865,926 | 76.0 |
| Right | 172,963,332 | 162,929,394 | 94.2 | 122,763,788 | 75.3 |

Supplementary File 1F: Methylation report

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Week | Sample | Side | Unique CpGs (raw) | Unique CpGs (filtered) | Average Methylation Level | Bisulphite conversion rate | Average CpG coverage |
| 8  PC | I | Left | 1,901,233 | 1,771,838 | 68.15% | 99.1% | 105.2 |
| Right | 1,757,660 | 1,602,695 | 63.85% | 99.3% | 84.0 |
| II | Left | 1,512,131 | 1,359,787 | 59.33% | 99.3% | 119.8 |
| Right | 1,805,290 | 1,672,820 | 64.46% | 99.3% | 128.8 |
| 10 PC | III | Left | 1,529,610 | 1,374,690 | 59.36% | 98.9% | 173.4 |
| Right | 1,302,963 | 1,129,590 | 54.66% | 99.1% | 172.6 |
| IV | Left | 1,195,800 | 1,037,570 | 53.91% | 99.1% | 152.6 |
| Right | 1,520,897 | 1,323,650 | 57.97% | 99.4% | 51.7 |
| 12 PC | V | Left | 1,705,992 | 1,564,450 | 63.93% | 99.3% | 158.0 |
| Right | 1,879,865 | 1,760,330 | 66.52% | 99.4% | 145.7 |

**Supplementary File 1G:** Top 25 asymmetrically expressed genes per sample

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 8 weeks PC | | | |
| I | | II | |
| Left | Right | Left | Right |
| 1 | STK35 | RPH3A | CDR1 | DHRS2 |
| 2 | CBFA2T2 | SLC39A11 | SEMA6D | MT2A |
| 3 | GPR125 | LRRIQ3 | GRIA2 | TNFRSF12A |
| 4 | MCU | LTA4H | CDR1 | MYBL2 |
| 5 | TASP1 | PLEKHH2 | MYO16 | TK1 |
| 6 | RAB28 | NHSL1 | LARP4 | TGFB1 |
| 7 | FAM65C | EFHB | NEFM | PTRF |
| 8 | COL3A1 | VRK2 | NRXN1 | TYMS |
| 9 | TENC1 | HS3ST1 | ANKRD36BP2 | SLC1A5 |
| 10 | SHROOM4 | ALS2CR12 | CCSER1 | KRT18 |
| 11 | ZRANB2-AS2 | NOMO2 | RALYL | FOXM1 |
| 12 | GPI | IL1RAPL1 | SYT4 | LINC00152 |
| 13 | NIPAL2 | SDCBP2 | PTPRD | C1QL1 |
| 14 | PLEKHH1 | CA8 | ATG16L1 | HSPB1 |
| 15 | XYLB | ADAMTS13 | VSNL1 | LGALS1 |
| 16 | ARHGAP31 | TACR3 | VSTM2A | BCAM |
| 17 | COL1A2 | STARD3 | GRIK2 | ACTN1 |
| 18 | CACNA1D | C5orf64 | LRRN3 | PDLIM7 |
| 19 | MLIP | ZBTB49 | SLC17A6 | MAFK |
| 20 | IGSF9 | TMLHE-AS1 | HIST1H3C | MAP2K3 |
| 21 | LY6G5B | NEDD9 | TMOD2 | RECQL4 |
| 22 | CIT | ANXA4 | FSTL5 | MYO1C |
| 23 | ADAMDEC1 | PODXL | INA | AXL |
| 24 | PLBD2 | ADAMTS5 | PDE4B | VGF |
| 25 | MCM9 | PRR4 | PHYHIPL | TAGLN2 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 10 weeks PC | | | | 12 weeks PC | |
| III | | IV | | V | |
| Left | Right | Left | Right | Left | Right |
| 1 | NFIA | MZT2A | GPR125 | CRH | - | SLC6A13 |
| 2 | PYY | TENC1 | LBX1 | FOXP2 | - | MYO1D |
| 3 | EP400NL | KIAA1462 | CHRNE | ETV1 | - | GJB1 |
| 4 | PLAGL2 | PLEKHH2 | C5orf58 | SULF1 | - | ZNF257 |
| 5 | ZNF396 | PPP1R3F | LHX9 | GLI3 | - | - |
| 6 | RBM26-AS1 | NIPSNAP3B | PROSER2 | EYA4 | - | - |
| 7 | SLC38A4 | GJC3 | BOC | CPA6 | - | - |
| 8 | POLR2M | COL27A1 | ARHGAP15 | LPL | - | - |
| 9 | MIR4500HG | TLX3 | DRGX | SRPK2 | - | - |
| 10 | DTHD1 | FAM172A | PAX3 | PIP5K1B | - | - |
| 11 | ARHGAP22 | DEPDC1 | MAFA | CD36 | - | - |
| 12 | TMEM72-AS1 | BNC2 | MAGEC3 | HMX3 | - | - |
| 13 | GGACT | ANO1 | LMX1B | KCNG1 | - | - |
| 14 | CHRM5 | GBX1 | POM121L4P | UTS2 | - | - |
| 15 | RPGR | PRHOXNB | NPY | EYA1 | - | - |
| 16 | IGSF9B | LMX1B | ZIC3 | NBPF14 | - | - |
| 17 | SULF1 | DRGX | EBF3 | FMO1 | - | - |
| 18 | ZNF710 | CLUHP3 | EBF1 | CORIN | - | - |
| 19 | XKR9 | - | NPPC | IGF1 | - | - |
| 20 | TAF3 | - | ANK1 | CRHBP | - | - |
| 21 | C21orf49 | - | GPC3 | NKX6-1 | - | - |
| 22 | SLC27A6 | - | SAMD12 | IL13RA2 | - | - |
| 23 | TATDN2 | - | TKTL1 | BMP3 | - | - |
| 24 | ADAM5 | - | UNCX | PI16 | - | - |
| 25 | EOGT | - | TACR1 | POU4F1 | - | - |