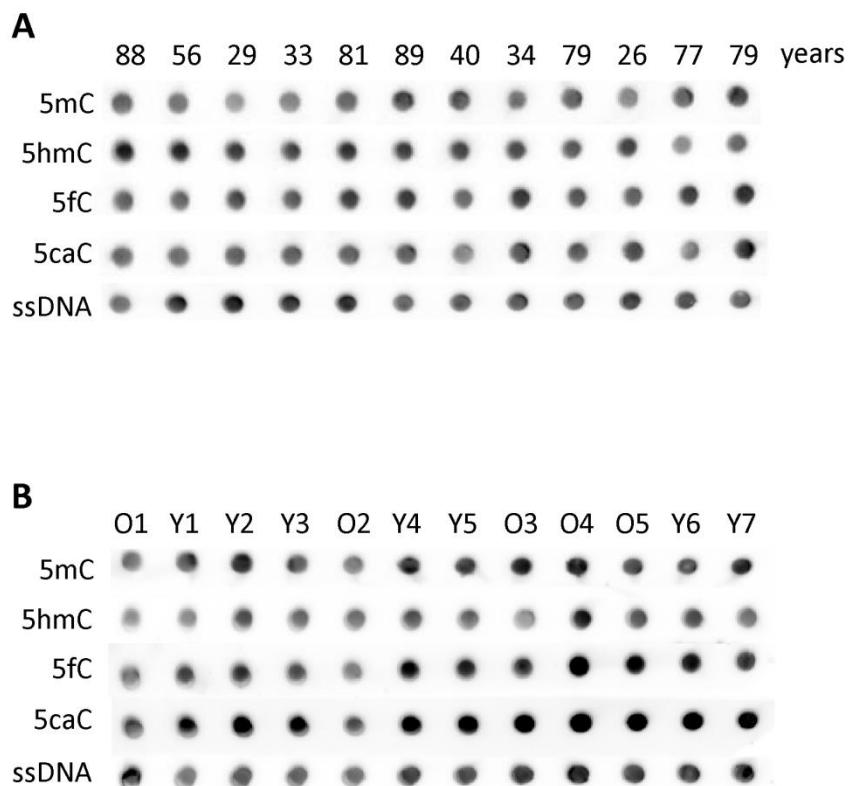
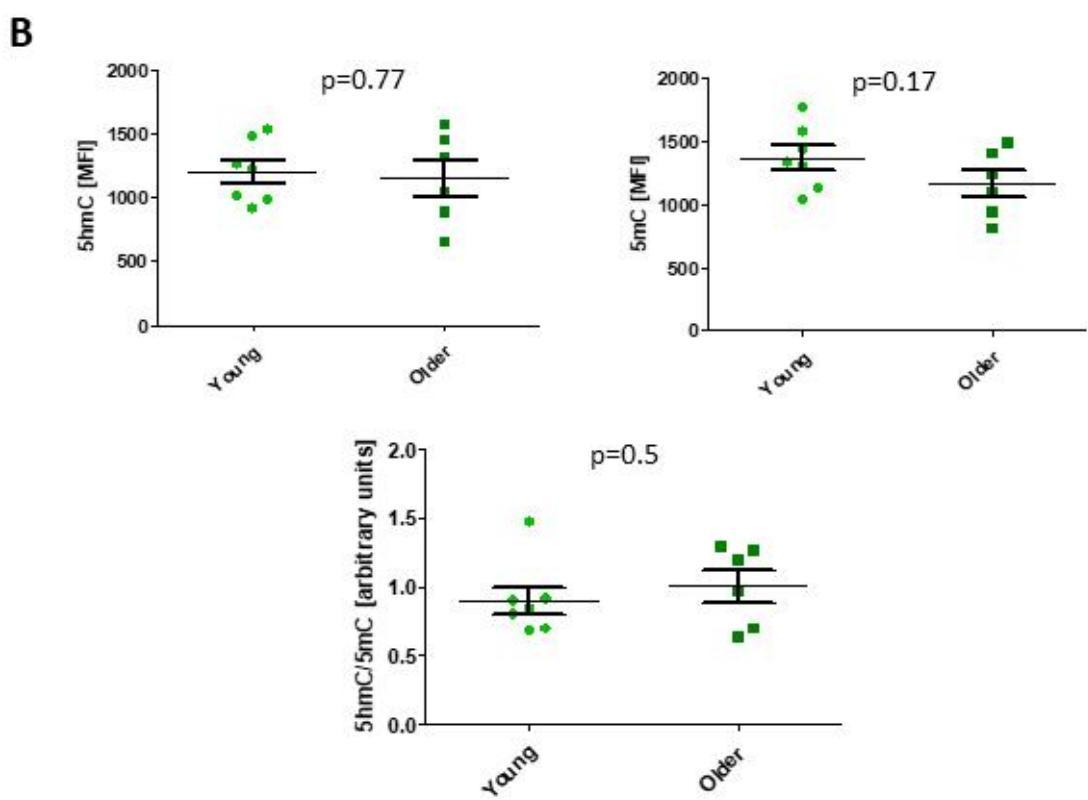
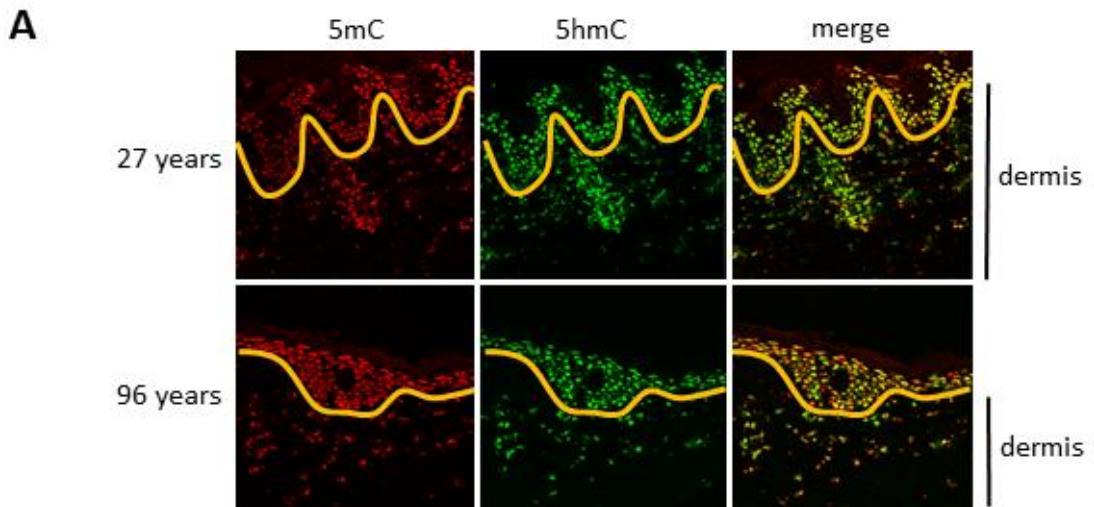


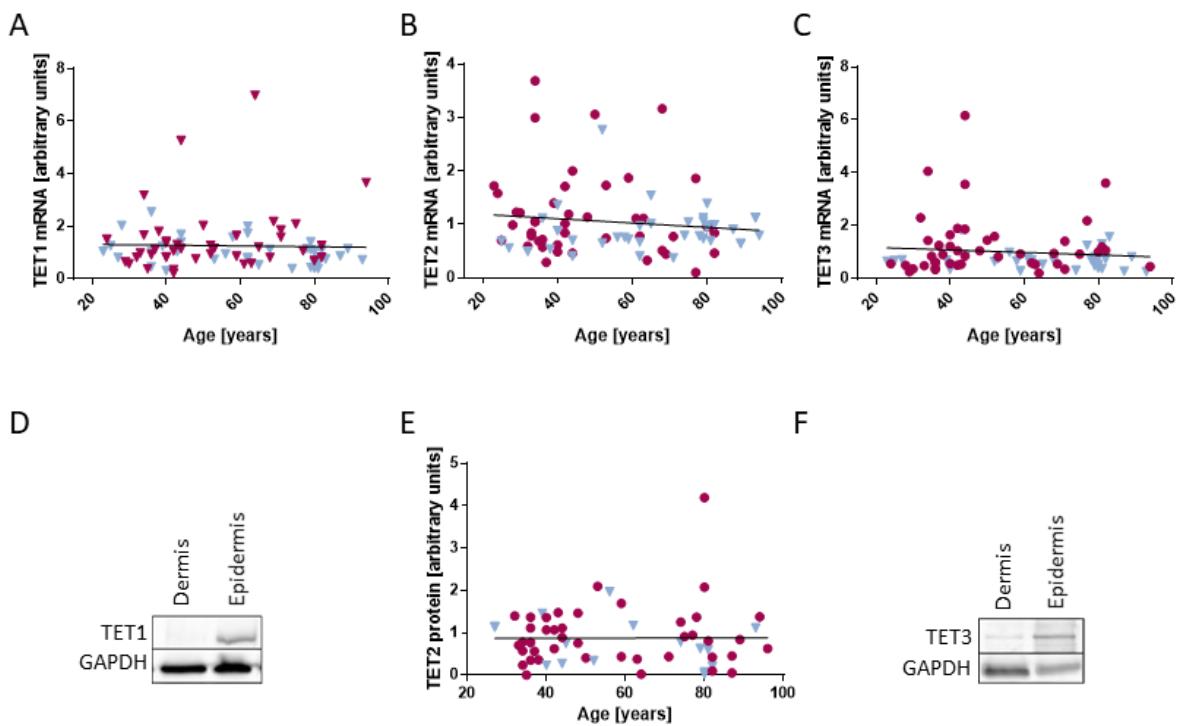
## Supplementary Materials



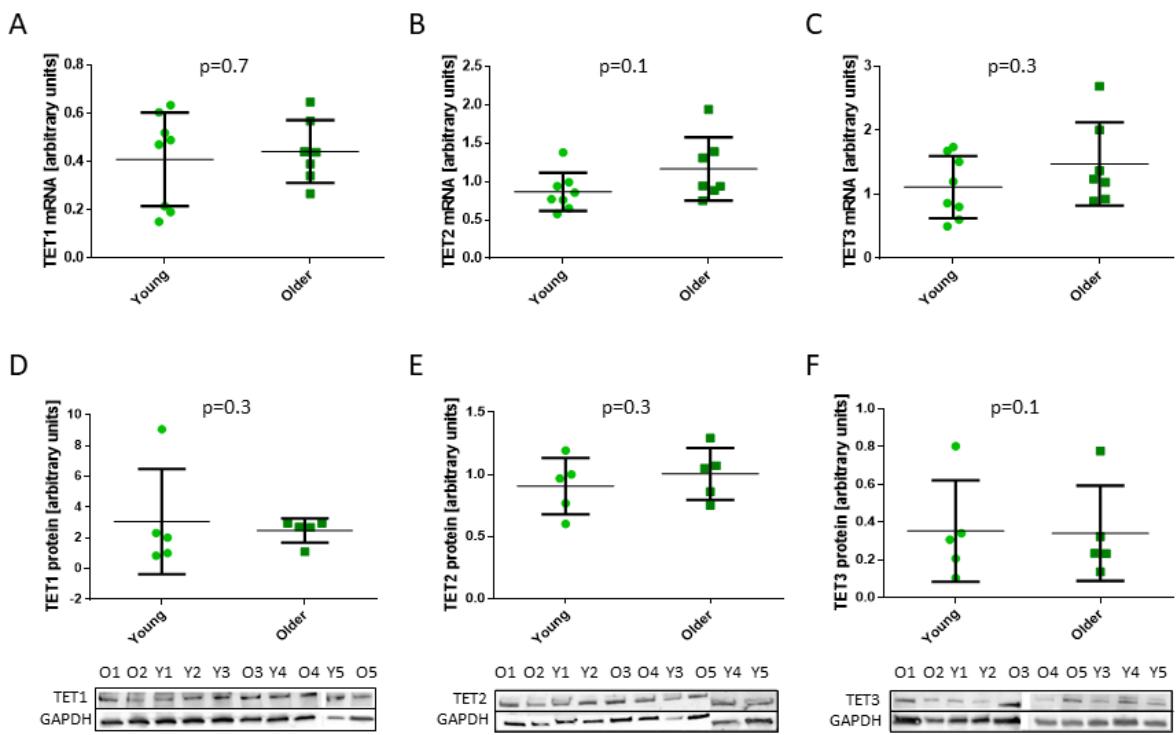
**Supplementary Figure S1.** Examples of dot blots evaluating global amounts of 5mC, 5hmC, 5fC, 5caC, and control ssDNA in individuals of various ages. A. Dot blots of DNA isolated from the whole human dermis. B. Dot blots of DNA isolated from primary fibroblast cultures originating from young (Y, 22–35 years) and older (O, 74–94 years) individuals.



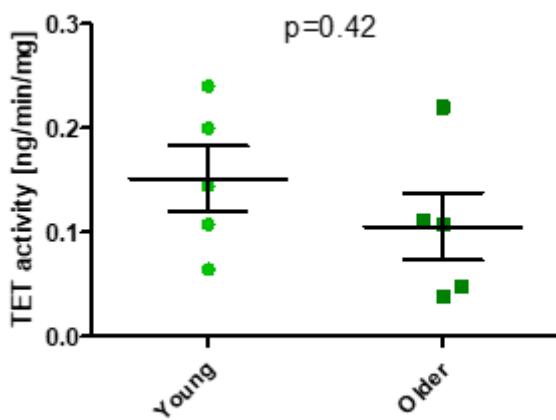
**Supplementary Figure S2.** A. Immunofluorescent detection of 5-methylcytosine (5mC) and 5-hydroxymethylcytosine (5hmC) in representative samples of whole-thickness skin of young (27 years) and age-advanced (96 years) individuals. Yellow lines divide dermis and epidermis. B. Results of the evaluation of the mean 5mC and 5hmC fluorescence intensity in dermal fibroblast nuclei using a confocal microscope and the ZEN 2012 version BLUE program. Each dot represents the mean fluorescence intensity of 100 nuclei in the dermis of a single study participant. The statistical analysis was performed with the Student's *t*-test. Young (22–35 years), older (74–94 years).



**Supplementary Figure S3.** Expression of TET1, TET2, and TET3 in the dermis of individuals of different ages. A., B., C. The expression of TET1, TET2, or TET3 mRNAs does not depend on age. The statistical analysis was performed with Spearman's correlation test. D. Immunoblot showing a lack of specific TET1 signal in the dermis. E. The expression of TET2 protein does not depend on age. The panel also shows an example of an immunoblot. F. Immunoblot showing a very weak specific TET3 signal in the dermis sample. In the majority of other samples, the TET3 signal was absent. The statistical analysis was performed with Spearman's correlation test. Purple circles: women. Blue triangles: men. Epidermis: positive control. GAPDH: internal loading control.



**Supplementary Figure S4.** Expression of TET1, TET2, and TET3 in primary fibroblasts. A., B., C. The expression of TET1, TET2, and TET3 mRNAs is similar in fibroblasts originating from young (22–35 years) and older (74–94 years) individuals. The statistical analysis was performed with the Student's *t*-test. D., E., F. The expression of TET1, TET2, and TET3 proteins does not differ between fibroblasts originating from young (22–35 years) and older (74–94 years) individuals. Panels D., E., F. also show examples of immunoblots. The statistical analysis was performed with the Mann-Whitney *U*-test. Y: younger. O: older. GAPDH: internal loading control.



**Supplementary Figure S5.** TET proteins activity in primary fibroblasts originating from young (22–35 years) and older (74–94 years) individuals. The statistical analysis was performed with the Mann-Whitney *U*-test.

**Supplementary Table S1.** Age-related DHMRs in human dermal fibroblasts.

#### MEDIPS wide window

| Chr   | start     | end       | width | log2fold | adj. <i>p</i> -value | annotation        | associated genes  |
|-------|-----------|-----------|-------|----------|----------------------|-------------------|-------------------|
| chr4  | 9350551   | 9351450   | 900   | 6,44     | 8,73E-02             | Distal Intergenic | USP17L28,USP17L27 |
| chr3  | 63264601  | 63265050  | 450   | 3,58     | 3,05E-02             | Intron            | SYNPR             |
| chr1  | 25283701  | 25285050  | 1350  | 3,51     | 5,39E-04             | Exon              | RSRP1,RHD         |
| chr8  | 106508701 | 106509150 | 450   | 3,49     | 7,72E-02             | Intron            | OXR1              |
| chr1  | 25285951  | 25287300  | 1350  | 3,45     | 4,78E-05             | Intron            | RSRP1,RHD         |
| chr13 | 98364601  | 98365050  | 450   | 3,44     | 7,36E-02             | Intron            | FARP1             |
| chr3  | 169557301 | 169557750 | 450   | 3,37     | 2,95E-02             | Intron            | MECOM             |
| chr18 | 52973551  | 52974000  | 450   | 3,33     | 7,97E-02             | Intron            | DCC               |
| chr10 | 89711101  | 89711550  | 450   | 3,25     | 9,35E-02             | Exon              | KIF20B            |
| chr2  | 200465551 | 200466000 | 450   | 3,21     | 3,19E-02             | Intron            | SPATS2L           |
| chr1  | 25274701  | 25276050  | 1350  | 3,17     | 3,48E-02             | Intron            | RSRP1,RHD         |
| chr1  | 25329601  | 25330050  | 450   | 3,16     | 5,10E-02             | 3' UTR            | RSRP1,RHD         |
| chr1  | 25331851  | 25332300  | 450   | 3,14     | 5,90E-05             | Intron            | RSRP1,RHD         |
| chr1  | 25312501  | 25312950  | 450   | 3,06     | 1,79E-02             | Intron            | RSRP1,RHD         |
| chr12 | 13463551  | 13464000  | 450   | 3,05     | 7,97E-02             | Intron            | GRIN2B            |
| chr2  | 30404701  | 30405150  | 450   | 3,02     | 5,32E-02             | Distal Intergenic | LCLAT1            |
| chr1  | 25321051  | 25321500  | 450   | 2,83     | 7,55E-02             | Intron            | RSRP1,RHD         |

|              |           |           |      |      |          |                   |                        |
|--------------|-----------|-----------|------|------|----------|-------------------|------------------------|
| <b>chr1</b>  | 57972151  | 57972600  | 450  | 2,81 | 9,80E-02 | Intron            | DAB1                   |
| <b>chr3</b>  | 36344701  | 36345150  | 450  | 2,81 | 8,76E-02 | Distal Intergenic | STAC                   |
| <b>chr9</b>  | 118828351 | 118828800 | 450  | 2,81 | 6,46E-02 | Distal Intergenic | LINC02578              |
| <b>chr1</b>  | 25318801  | 25319250  | 450  | 2,81 | 7,15E-02 | Intron            | RSRP1,RHD              |
| <b>chr15</b> | 77196151  | 77196600  | 450  | 2,80 | 4,84E-02 | Intron            | PEAK1                  |
| <b>chr11</b> | 55570051  | 55570500  | 450  | 2,77 | 4,64E-02 | Promoter          | OR4C16                 |
| <b>chr3</b>  | 9428851   | 9429300   | 450  | 2,75 | 6,74E-02 | 5' UTR            | SETD5                  |
| <b>chr2</b>  | 49888801  | 49889250  | 450  | 2,71 | 7,36E-02 | Exon              | FSHR                   |
| <b>chr1</b>  | 16425451  | 16425900  | 450  | 2,54 | 8,59E-02 | 5' UTR            | SPATA21                |
| <b>chr4</b>  | 78406201  | 78406650  | 450  | 2,54 | 9,80E-02 | Intron            | FRAS1                  |
| <b>chr15</b> | 45773101  | 45773550  | 450  | 2,46 | 9,80E-02 | Intron            | LOC105370802           |
| <b>chr1</b>  | 25304851  | 25305300  | 450  | 2,38 | 1,52E-02 | Intron            | RSRP1,RHD              |
| <b>chr1</b>  | 21123901  | 21124350  | 450  | 2,30 | 7,21E-02 | Intron            | EIF4G3                 |
| <b>chr7</b>  | 48560401  | 48560850  | 450  | 2,30 | 9,08E-02 | Intron            | ABCA13                 |
| <b>chr18</b> | 48523501  | 48523950  | 450  | 2,28 | 9,80E-02 | Distal Intergenic | CTIF                   |
| <b>chr6</b>  | 163437751 | 163438200 | 450  | 2,12 | 9,46E-02 | Intron            | QKI                    |
| <b>chr1</b>  | 25302601  | 25303050  | 450  | 2,12 | 7,91E-02 | Intron            | RSRP1,RHD              |
| <b>chr1</b>  | 25292251  | 25293600  | 1350 | 2,10 | 1,38E-06 | Intron            | RSRP1,RHD              |
| <b>chr5</b>  | 100171351 | 100171800 | 450  | 2,09 | 7,97E-02 | Distal Intergenic | LOC100133050           |
| <b>chr1</b>  | 221013451 | 221013900 | 450  | 2,02 | 8,76E-02 | Distal Intergenic | HLX-AS1                |
| <b>chr2</b>  | 41746051  | 41746500  | 450  | 2,01 | 8,76E-02 | Distal Intergenic | LINC01913              |
| <b>chr2</b>  | 29657251  | 29657700  | 450  | 1,91 | 9,38E-02 | Intron            | ALK                    |
| <b>chr14</b> | 101169001 | 101169450 | 450  | 1,82 | 4,84E-02 | Distal Intergenic | LINC02285              |
| <b>chr1</b>  | 166662901 | 166663350 | 450  | 1,73 | 4,96E-02 | Distal Intergenic | FMO9P                  |
| <b>chr16</b> | 81595801  | 81596250  | 450  | 1,72 | 2,30E-02 | Intron            | CMIP                   |
| <b>chr19</b> | 33504301  | 33504750  | 450  | 1,66 | 4,84E-02 | Intron            | PEPD                   |
| <b>chr5</b>  | 163507951 | 163508400 | 450  | 1,66 | 2,73E-02 | Intron            | MAT2B                  |
| <b>chr5</b>  | 119098801 | 119099250 | 450  | 1,66 | 9,74E-02 | Intron            | DMXL1                  |
| <b>chr10</b> | 1860751   | 1861200   | 450  | 1,65 | 4,84E-02 | Distal Intergenic | ADARB2                 |
| <b>chr21</b> | 19431901  | 19432800  | 900  | 1,65 | 4,02E-02 | Distal Intergenic | -                      |
| <b>chr14</b> | 88584751  | 88585200  | 450  | 1,64 | 8,76E-02 | Intron            | ZC3H14                 |
| <b>chr2</b>  | 167633551 | 167634000 | 450  | 1,64 | 7,97E-02 | Distal Intergenic | LOC105616981           |
| <b>chr3</b>  | 24750001  | 24750450  | 450  | 1,62 | 4,84E-02 | Intron            | RARB                   |
| <b>chr19</b> | 1629901   | 1630350   | 450  | 1,60 | 7,36E-02 | Intron            | TCF3                   |
| <b>chr4</b>  | 150087601 | 150088050 | 450  | 1,60 | 5,32E-02 | Intron            | DCLK2                  |
| <b>chr19</b> | 11009251  | 11009700  | 450  | 1,59 | 2,73E-02 | Intron            | SMARCA4                |
| <b>chr4</b>  | 75555001  | 75555450  | 450  | 1,57 | 6,48E-02 | Promoter          | ODAPH,THAP6            |
| <b>chr1</b>  | 2186101   | 2186550   | 450  | 1,54 | 9,74E-02 | 3' UTR            | FAAP20,PRKCZ-AS1,PRKCZ |
| <b>chr3</b>  | 114513751 | 114514200 | 450  | 1,54 | 7,91E-02 | Intron            | ZBTB20-AS5,ZBTB20      |
| <b>chr5</b>  | 67573351  | 67573800  | 450  | 1,54 | 8,76E-02 | Intron            | LOC101928858           |
| <b>chr15</b> | 47640601  | 47641050  | 450  | 1,47 | 8,76E-02 | Intron            | SEMA6D                 |
| <b>chr18</b> | 72913501  | 72913950  | 450  | 1,46 | 8,76E-02 | Distal Intergenic | LOC100505797           |
| <b>chr8</b>  | 25399351  | 25399800  | 450  | 1,41 | 7,91E-02 | Intron            | DOCK5                  |
| <b>chr7</b>  | 278101    | 278550    | 450  | 1,40 | 9,38E-02 | Distal Intergenic | LOC442497              |

|              |           |           |     |       |          |                   |                       |
|--------------|-----------|-----------|-----|-------|----------|-------------------|-----------------------|
| <b>chr16</b> | 953551    | 954000    | 450 | 1,40  | 8,76E-02 | Intron            | LMF1                  |
| <b>chr1</b>  | 246796651 | 246797100 | 450 | 1,38  | 9,08E-02 | Intron            | LINC01341             |
| <b>chr18</b> | 12957751  | 12958200  | 450 | 1,38  | 7,97E-02 | Intron            | SEH1L                 |
| <b>chr2</b>  | 199820701 | 199821600 | 900 | 1,37  | 8,11E-02 | Intron            | FTCDNL1               |
| <b>chr14</b> | 96745951  | 96746850  | 900 | 1,37  | 4,03E-02 | Intron            | LINC02299             |
| <b>chr3</b>  | 49672351  | 49672800  | 450 | 1,30  | 7,55E-02 | Promoter          | APEH,BSN              |
| <b>chr13</b> | 32597551  | 32598000  | 450 | 1,28  | 4,84E-02 | Intron            | PDS5B                 |
| <b>chr4</b>  | 62645851  | 62646300  | 450 | 1,28  | 3,05E-02 | Distal Intergenic | ADGRL3-AS1            |
| <b>chr10</b> | 30328651  | 30329100  | 450 | 1,27  | 1,50E-02 | Intron            | MTPAP                 |
| <b>chr21</b> | 36909901  | 36910350  | 450 | 1,24  | 7,21E-02 | Intron            | HLCS                  |
| <b>chr7</b>  | 144190801 | 144191250 | 450 | 1,23  | 2,87E-03 | Intron            | ARHGEF35,LOC101928605 |
| <b>chr17</b> | 19097551  | 19098000  | 450 | 1,20  | 7,99E-02 | Distal Intergenic | SNORD3D               |
| <b>chr1</b>  | 64974601  | 64975050  | 450 | 1,18  | 7,97E-02 | Exon              | LINC01359,JAK1        |
| <b>chr8</b>  | 62874001  | 62874450  | 450 | 1,13  | 9,74E-02 | Intron            | NKAIN3                |
| <b>chr14</b> | 63229951  | 63230400  | 450 | 1,12  | 8,22E-03 | Intron            | RHOJ                  |
| <b>chr7</b>  | 144354601 | 144355050 | 450 | 1,11  | 4,84E-02 | Promoter          | ARHGEF5               |
| <b>chr4</b>  | 37584901  | 37585800  | 900 | 1,03  | 4,60E-02 | Intron            | C4orf19,RELL1         |
| <b>chr21</b> | 8454601   | 8455050   | 450 | 0,96  | 5,32E-02 | Distal Intergenic | FP236383.3-202        |
| <b>chr2</b>  | 26517601  | 26518050  | 450 | 0,90  | 8,76E-02 | Intron            | OTOF                  |
| <b>chr14</b> | 105055201 | 105055650 | 450 | 0,82  | 4,84E-02 | 5' UTR            | GPR132                |
| <b>chr17</b> | 61402501  | 61403400  | 900 | 0,75  | 6,43E-02 | 3' UTR            | TBX2-AS1,TBX2         |
| <b>chr16</b> | 16233301  | 16233750  | 450 | 0,71  | 8,76E-02 | Intron            | MIR3179-4             |
| <b>chr12</b> | 59328001  | 59328450  | 450 | -0,45 | 5,45E-02 | Distal Intergenic | SLC16A7               |
| <b>chr3</b>  | 196099651 | 196100100 | 450 | -0,54 | 8,37E-04 | Distal Intergenic | TFRC                  |
| <b>chrX</b>  | 19543501  | 19543950  | 450 | -0,64 | 2,73E-02 | Intron            | SH3KBP1               |
| <b>chrX</b>  | 73080451  | 73080900  | 450 | -0,73 | 3,07E-02 | Promoter          | PABPC1L2A             |
| <b>chr6</b>  | 909001    | 909450    | 450 | -0,77 | 3,80E-02 | Exon              | LINC01622             |
| <b>chr14</b> | 18656101  | 18656550  | 450 | -0,87 | 5,32E-02 | Distal Intergenic | LINC02297             |
| <b>chr18</b> | 76618801  | 76619250  | 450 | -0,91 | 7,72E-02 | Intron            | LINC00683,LINC01927   |
| <b>chr1</b>  | 6102901   | 6103350   | 450 | -0,92 | 5,32E-02 | 3' UTR            | CHD5,KCNAB2           |
| <b>chr6</b>  | 909451    | 909900    | 450 | -1,00 | 9,37E-02 | Distal Intergenic | LINC01622             |
| <b>chr1</b>  | 120267901 | 120268350 | 450 | -1,03 | 6,54E-02 | Intron            | SEC22B                |
| <b>chrX</b>  | 29977201  | 29977650  | 450 | -1,08 | 4,94E-02 | Distal Intergenic | MAGEB2                |
| <b>chr1</b>  | 16780501  | 16780950  | 450 | -1,15 | 6,46E-02 | Intron            | CROCC                 |
| <b>chr7</b>  | 158915701 | 158916150 | 450 | -1,15 | 9,35E-02 | Intron            | WDR60                 |
| <b>chrX</b>  | 102436201 | 102436650 | 450 | -1,15 | 3,66E-02 | Intron            | TMSB15A               |
| <b>chrX</b>  | 72836101  | 72836550  | 450 | -1,16 | 7,72E-02 | Intron            | FAM226A               |
| <b>chrX</b>  | 3132451   | 3132900   | 450 | -1,19 | 4,71E-02 | Distal Intergenic | ARSF                  |
| <b>chr15</b> | 20344951  | 20345400  | 450 | -1,19 | 7,97E-02 | Exon              | CHEK2P2               |
| <b>chrX</b>  | 50046301  | 50046750  | 450 | -1,21 | 4,84E-02 | Intron            | CLCN5                 |
| <b>chrX</b>  | 85929301  | 85929750  | 450 | -1,21 | 4,84E-02 | Intron            | CHM                   |
| <b>chrX</b>  | 74291851  | 74292300  | 450 | -1,25 | 7,55E-02 | Promoter          | FTX,MIR374A,MIR545    |
| <b>chr3</b>  | 89588701  | 89589150  | 450 | -1,25 | 9,80E-02 | Exon              | EPHA3                 |
| <b>chrX</b>  | 50815351  | 50815800  | 450 | -1,27 | 4,84E-02 | Promoter          | SHROOM4               |
| <b>chrX</b>  | 85928851  | 85929300  | 450 | -1,27 | 2,52E-02 | Intron            | CHM                   |

|              |           |           |     |       |          |                   |              |
|--------------|-----------|-----------|-----|-------|----------|-------------------|--------------|
| <b>chr5</b>  | 3018601   | 3019050   | 450 | -1,27 | 2,73E-02 | Distal Intergenic | LINC01377    |
| <b>chr12</b> | 90738001  | 90738450  | 450 | -1,33 | 7,72E-02 | Distal Intergenic | LINC00615    |
| <b>chr7</b>  | 14281201  | 14281650  | 450 | -1,36 | 7,55E-02 | Intron            | DGKB         |
| <b>chrX</b>  | 110414251 | 110414700 | 450 | -1,36 | 6,46E-02 | Intron            | RTL9,AMMECR1 |
| <b>chr5</b>  | 1626751   | 1627200   | 450 | -1,36 | 7,63E-02 | Exon              | LOC728613    |
| <b>chrX</b>  | 7378201   | 7378650   | 450 | -1,38 | 3,74E-02 | Distal Intergenic | STS          |
| <b>chr12</b> | 53187301  | 53187750  | 450 | -1,43 | 6,54E-02 | 3' UTR            | ZNF740,ITGB7 |
| <b>chr6</b>  | 166784401 | 166784850 | 450 | -1,44 | 5,32E-02 | Intron            | RPS6KA2      |
| <b>chr7</b>  | 147549151 | 147549600 | 450 | -1,44 | 9,08E-02 | Intron            | LOC105375556 |
| <b>chr7</b>  | 14281651  | 14282100  | 450 | -1,45 | 9,35E-02 | Intron            | DGKB         |
| <b>chrX</b>  | 64487251  | 64487700  | 450 | -1,46 | 7,63E-02 | Distal Intergenic | MTMR8        |
| <b>chrX</b>  | 48262951  | 48263400  | 450 | -1,47 | 7,95E-02 | Intron            | SSX1         |
| <b>chrX</b>  | 89827201  | 89827650  | 450 | -1,47 | 7,72E-02 | Distal Intergenic | TGIF2LX      |
| <b>chr7</b>  | 111382201 | 111382650 | 450 | -1,56 | 1,55E-02 | Intron            | IMMP2L       |
| <b>chr15</b> | 22141351  | 22141800  | 450 | -1,59 | 1,67E-04 | Distal Intergenic | LOC642131    |
| <b>chrX</b>  | 3686401   | 3686850   | 450 | -1,62 | 6,19E-02 | Intron            | PRKX         |
| <b>chr15</b> | 22140901  | 22141350  | 450 | -1,66 | 1,47E-03 | Distal Intergenic | LOC642131    |
| <b>chrX</b>  | 149887351 | 149887800 | 450 | -1,68 | 3,05E-02 | Distal Intergenic | MAGEA8       |
| <b>chrX</b>  | 101057401 | 101057850 | 450 | -1,74 | 4,84E-02 | Intron            | TRMT2B       |
| <b>chr7</b>  | 158916151 | 158916600 | 450 | -1,74 | 2,30E-02 | Intron            | WDR60        |
| <b>chr3</b>  | 174603601 | 174604050 | 450 | -1,74 | 9,80E-02 | Intron            | NAALADL2     |
| <b>chr10</b> | 89527051  | 89527500  | 450 | -1,80 | 7,55E-02 | Intron            | SLC16A12     |
| <b>chr13</b> | 69157801  | 69158250  | 450 | -1,85 | 8,76E-02 | Distal Intergenic | LINC00383    |
| <b>chr22</b> | 11922301  | 11922750  | 450 | -1,89 | 5,16E-02 | Distal Intergenic | FRG1FP       |
| <b>chr6</b>  | 51735151  | 51735600  | 450 | -2,01 | 8,32E-02 | Intron            | PKHD1        |
| <b>chrX</b>  | 137206351 | 137206800 | 450 | -2,09 | 2,73E-02 | Distal Intergenic | GPR101       |
| <b>chr6</b>  | 76407751  | 76408200  | 450 | -2,12 | 9,18E-02 | Distal Intergenic | LINC02540    |
| <b>chrX</b>  | 88240501  | 88240950  | 450 | -2,13 | 5,82E-02 | Distal Intergenic | CPXCR1       |
| <b>chr1</b>  | 25406101  | 25406550  | 450 | -2,19 | 6,50E-02 | Intron            | RHCE         |
| <b>chr22</b> | 20587951  | 20588400  | 450 | -2,20 | 9,74E-02 | Exon              | MED15        |
| <b>chr1</b>  | 25405651  | 25406100  | 450 | -2,24 | 2,30E-02 | Intron            | RHCE         |
| <b>chr9</b>  | 35289901  | 35290350  | 450 | -2,30 | 3,45E-02 | Intron            | UNC13B       |
| <b>chr6</b>  | 4642201   | 4642650   | 450 | -2,35 | 6,65E-02 | Distal Intergenic | KU-MEL-3     |
| <b>chr3</b>  | 180219601 | 180220050 | 450 | -2,40 | 9,08E-02 | Distal Intergenic | PEX5L        |
| <b>chrX</b>  | 89767801  | 89768250  | 450 | -2,47 | 2,30E-02 | Distal Intergenic | TGIF2LX      |
| <b>chr4</b>  | 6650101   | 6650550   | 450 | -2,49 | 7,74E-02 | Intron            | LINC02482    |
| <b>chr6</b>  | 51735601  | 51736050  | 450 | -2,51 | 2,30E-02 | Intron            | PKHD1        |
| <b>chr13</b> | 68024251  | 68024700  | 450 | -2,52 | 8,42E-02 | Distal Intergenic | LINC00364    |
| <b>chr13</b> | 69468751  | 69469200  | 450 | -2,53 | 1,40E-02 | Distal Intergenic | LINC00383    |
| <b>chrX</b>  | 51088501  | 51088950  | 450 | -2,66 | 7,99E-02 | Exon              | LINC01284    |
| <b>chr11</b> | 10000801  | 10001250  | 450 | -2,75 | 8,97E-02 | Exon              | SBF2         |
| <b>chrX</b>  | 147693151 | 147693600 | 450 | -2,80 | 5,80E-03 | Distal Intergenic | FMR1         |
| <b>chrX</b>  | 119997451 | 119997900 | 450 | -2,93 | 7,91E-02 | Intron            | RHOXF1P1     |
| <b>chr14</b> | 106757551 | 106758000 | 450 | -2,95 | 6,74E-02 | Distal Intergenic | MIR5195      |
| <b>chr11</b> | 55616851  | 55617300  | 450 | -3,03 | 7,00E-02 | Distal Intergenic | OR4C11       |

|       |           |           |     |       |          |                   |        |
|-------|-----------|-----------|-----|-------|----------|-------------------|--------|
| chrX  | 6764401   | 6764850   | 450 | -3,18 | 8,97E-02 | Distal Intergenic | VCX3A  |
| chr2  | 115168501 | 115168950 | 450 | -3,31 | 2,74E-03 | Intron            | DPP10  |
| chrX  | 88698151  | 88698600  | 450 | -3,99 | 7,36E-02 | Distal Intergenic | CPXCR1 |
| chr6  | 117029701 | 117030150 | 450 | -4,24 | 3,59E-02 | Distal Intergenic | RFX6   |
| chr15 | 68535451  | 68535900  | 450 | -4,24 | 8,76E-02 | Distal Intergenic | CORO2B |
| chr1  | 71516251  | 71516700  | 450 | -4,29 | 6,05E-02 | Intron            | NEGR1  |
| chr4  | 44492401  | 44492850  | 450 | -4,29 | 7,55E-02 | Distal Intergenic | KCTD8  |
| chr1  | 71515801  | 71516250  | 450 | -4,34 | 4,84E-02 | Intron            | NEGR1  |
| chrX  | 82856701  | 82857150  | 450 | -5,18 | 8,59E-02 | Distal Intergenic | POU3F4 |
| chrX  | 112947751 | 112948200 | 450 | -5,42 | 7,55E-02 | Distal Intergenic | AMOT   |

### MEDIPS narrow window

| Chr   | start     | end       | width | log2fold | adj. p-value | annotation        | associated genes |
|-------|-----------|-----------|-------|----------|--------------|-------------------|------------------|
| chr4  | 9351001   | 9351100   | 100   | 6,63     | 9,19E-02     | Distal Intergenic | USP17L28         |
| chr1  | 25312701  | 25312750  | 50    | 4,32     | 9,19E-03     | Intron            | RSRP1,RHD        |
| chr4  | 65423251  | 65423300  | 50    | 4,27     | 9,19E-03     | Intron            | EPHA5            |
| chr1  | 25332101  | 25332200  | 100   | 4,00     | 1,99E-06     | Intron            | RSRP1,RHD        |
| chr2  | 200465801 | 200465900 | 100   | 3,97     | 7,16E-02     | Intron            | SPATS2L          |
| chr1  | 25330051  | 25330150  | 100   | 3,93     | 2,84E-02     | 3' UTR            | RSRP1,RHD        |
| chr1  | 25283951  | 25284000  | 50    | 3,91     | 9,75E-02     | Intron            | RSRP1,RHD        |
| chr16 | 83481401  | 83481450  | 50    | 3,91     | 9,61E-02     | Intron            | CDH13            |
| chr11 | 3178201   | 3178250   | 50    | 3,91     | 1,17E-03     | Distal Intergenic | OSBPL5           |
| chr1  | 25286501  | 25286900  | 400   | 3,73     | 1,08E-07     | Intron            | RSRP1,RHD        |
| chr1  | 25284801  | 25284850  | 50    | 3,47     | 2,02E-02     | Intron            | RSRP1,RHD        |
| chr1  | 25284451  | 25284750  | 300   | 3,46     | 7,39E-03     | Exon              | RSRP1,RHD        |
| chr1  | 25284201  | 25284250  | 50    | 3,38     | 1,18E-03     | Intron            | RSRP1,RHD        |
| chr2  | 40817001  | 40817050  | 50    | 3,29     | 2,68E-02     | Distal Intergenic | SLC8A1           |
| chr1  | 25284351  | 25284400  | 50    | 3,28     | 4,86E-03     | Intron            | RSRP1,RHD        |
| chr1  | 25293401  | 25293450  | 50    | 3,27     | 3,31E-05     | Intron            | RSRP1,RHD        |
| chr1  | 25286401  | 25286450  | 50    | 3,24     | 1,25E-03     | Intron            | RSRP1,RHD        |
| chr1  | 25332251  | 25332300  | 50    | 3,23     | 1,55E-02     | Intron            | RSRP1,RHD        |
| chr1  | 25274701  | 25274950  | 250   | 3,18     | 1,24E-02     | Intron            | RSRP1,RHD        |
| chr3  | 141814001 | 141814050 | 50    | 3,16     | 6,37E-02     | Intron            | GRK7             |
| chr1  | 25286301  | 25286350  | 50    | 3,16     | 9,89E-03     | Intron            | RSRP1,RHD        |
| chr12 | 132725201 | 132725250 | 50    | 3,16     | 8,58E-02     | Distal Intergenic | PGAM5,ANKLE2     |
| chr1  | 25275051  | 25275200  | 150   | 3,12     | 2,58E-03     | Intron            | RSRP1,RHD        |
| chr1  | 25331801  | 25332050  | 250   | 3,11     | 6,61E-03     | Intron            | RSRP1,RHD        |
| chr4  | 151972201 | 151972250 | 50    | 3,07     | 9,28E-02     | Distal Intergenic | LINC02273        |
| chr1  | 25286951  | 25287100  | 150   | 3,02     | 1,16E-04     | Intron            | RSRP1,RHD        |
| chr1  | 25275301  | 25275400  | 100   | 2,98     | 3,91E-02     | Intron            | RSRP1,RHD        |
| chr1  | 25287151  | 25287200  | 50    | 2,89     | 1,17E-02     | Intron            | RSRP1,RHD        |
| chr14 | 103814051 | 103814100 | 50    | 2,89     | 6,00E-02     | Intron            | PPP1R13B         |

|              |           |           |     |      |          |                   |                    |
|--------------|-----------|-----------|-----|------|----------|-------------------|--------------------|
| <b>chr18</b> | 23420951  | 23421000  | 50  | 2,73 | 9,61E-02 | Intron            | TMEM241            |
| <b>chr1</b>  | 25293301  | 25293350  | 50  | 2,73 | 7,11E-03 | Intron            | RSRP1,RHD          |
| <b>chrX</b>  | 23227151  | 23227250  | 100 | 2,69 | 9,01E-02 | Intron            | PTCHD1-AS          |
| <b>chr1</b>  | 25318701  | 25318750  | 50  | 2,66 | 9,07E-02 | Intron            | RSRP1,RHD          |
| <b>chr2</b>  | 41746101  | 41746150  | 50  | 2,61 | 3,52E-02 | Distal Intergenic | LINC01913          |
| <b>chr10</b> | 6158001   | 6158100   | 100 | 2,51 | 4,16E-02 | Intron            | PFKFB3             |
| <b>chr3</b>  | 159668751 | 159668800 | 50  | 2,49 | 9,75E-02 | Intron            | IQCJ-SCHIP1,SCHIP1 |
| <b>chr2</b>  | 234448551 | 234448600 | 50  | 2,44 | 6,30E-02 | Intron            | LINC01891          |
| <b>chr19</b> | 51792651  | 51792700  | 50  | 2,35 | 7,37E-02 | Intron            | FPR1,FPR3          |
| <b>chr7</b>  | 144247851 | 144247900 | 50  | 2,34 | 3,06E-02 | Intron            | LOC101928605       |
| <b>chr1</b>  | 25293201  | 25293250  | 50  | 2,33 | 3,21E-05 | Intron            | RSRP1,RHD          |
| <b>chr13</b> | 51457351  | 51457400  | 50  | 2,32 | 7,96E-02 | Intron            | INTS6-AS1,INTS6    |
| <b>chr13</b> | 51457601  | 51457650  | 50  | 2,30 | 7,16E-02 | Intron            | INTS6-AS1,INTS6    |
| <b>chr16</b> | 54979551  | 54979600  | 50  | 2,30 | 7,55E-02 | Distal Intergenic | IRX5               |
| <b>chr12</b> | 85672001  | 85672050  | 50  | 2,30 | 5,91E-02 | Distal Intergenic | RASSF9             |
| <b>chr9</b>  | 67578951  | 67579050  | 100 | 2,28 | 7,12E-02 | Distal Intergenic | CBWD5              |
| <b>chr1</b>  | 25305701  | 25305850  | 150 | 2,27 | 6,19E-02 | Intron            | RSRP1,RHD          |
| <b>chr17</b> | 43056251  | 43056300  | 50  | 2,26 | 7,35E-02 | Intron            | BRCA1              |
| <b>chr9</b>  | 77794501  | 77794550  | 50  | 2,22 | 2,85E-02 | Exon              | GNAQ               |
| <b>chr14</b> | 83529651  | 83529750  | 100 | 2,13 | 3,08E-02 | Distal Intergenic | LINC02301          |
| <b>chr19</b> | 33504651  | 33504750  | 100 | 2,11 | 2,43E-02 | Intron            | PEPD               |
| <b>chr8</b>  | 138943551 | 138943600 | 50  | 2,10 | 6,26E-02 | Distal Intergenic | COL22A1            |
| <b>chr14</b> | 63229951  | 63230000  | 50  | 2,08 | 7,26E-02 | Intron            | RHOJ               |
| <b>chr3</b>  | 108391401 | 108391450 | 50  | 2,08 | 9,06E-02 | Intron            | MYH15              |
| <b>chr1</b>  | 25292351  | 25292400  | 50  | 2,05 | 1,11E-02 | Intron            | RSRP1,RHD          |
| <b>chr19</b> | 11009301  | 11009350  | 50  | 2,05 | 8,88E-02 | Intron            | SMARCA4            |
| <b>chr1</b>  | 25292451  | 25292550  | 100 | 2,04 | 2,57E-03 | Intron            | RSRP1,RHD          |
| <b>chr11</b> | 115697851 | 115697900 | 50  | 2,03 | 3,82E-02 | Intron            | LINC00900          |
| <b>chr1</b>  | 25292601  | 25292650  | 50  | 2,03 | 2,60E-06 | Intron            | RSRP1,RHD          |
| <b>chr14</b> | 81590651  | 81590700  | 50  | 2,02 | 9,07E-02 | Distal Intergenic | LINC01467          |
| <b>chr1</b>  | 25292951  | 25293050  | 100 | 2,02 | 1,27E-06 | Intron            | RSRP1,RHD          |
| <b>chr2</b>  | 109845501 | 109845550 | 50  | 1,97 | 7,53E-02 | Intron            | RGPD6              |
| <b>chr1</b>  | 153580251 | 153580300 | 50  | 1,97 | 9,61E-02 | Distal Intergenic | S100A2             |
| <b>chr1</b>  | 25295601  | 25295650  | 50  | 1,96 | 7,03E-02 | Intron            | RSRP1,RHD          |
| <b>chr1</b>  | 232947251 | 232947300 | 50  | 1,94 | 7,69E-02 | Distal Intergenic | NTPCR              |
| <b>chr12</b> | 4181801   | 4182000   | 200 | 1,88 | 6,05E-02 | Distal Intergenic | TIGAR              |
| <b>chr6</b>  | 76219501  | 76219550  | 50  | 1,87 | 6,97E-02 | Distal Intergenic | IMPG1              |
| <b>chr4</b>  | 28588601  | 28588650  | 50  | 1,87 | 1,99E-02 | Intron            | MIR4275            |
| <b>chr17</b> | 71545501  | 71545550  | 50  | 1,86 | 7,53E-02 | Distal Intergenic | CASC17             |
| <b>chr16</b> | 81596001  | 81596050  | 50  | 1,86 | 3,81E-02 | Intron            | CMIP               |
| <b>chr16</b> | 81596101  | 81596150  | 50  | 1,85 | 9,75E-02 | Intron            | CMIP               |
| <b>chr21</b> | 19432301  | 19432350  | 50  | 1,83 | 2,86E-02 | Distal Intergenic | -                  |
| <b>chr1</b>  | 166663301 | 166663350 | 50  | 1,81 | 8,25E-02 | Distal Intergenic | FMO9P              |
| <b>chr2</b>  | 26138151  | 26138200  | 50  | 1,81 | 4,91E-02 | Distal Intergenic | GAREM2,RAB10       |
| <b>chr22</b> | 18981701  | 18981750  | 50  | 1,79 | 9,87E-02 | Intron            | DGCR5              |

|              |           |           |     |      |          |                   |                       |
|--------------|-----------|-----------|-----|------|----------|-------------------|-----------------------|
| <b>chr3</b>  | 128694551 | 128694750 | 200 | 1,79 | 4,70E-02 | Distal Intergenic | RPN1                  |
| <b>chr2</b>  | 135981401 | 135981450 | 50  | 1,75 | 6,96E-02 | Intron            | DARS,DARS-AS1         |
| <b>chr16</b> | 81596201  | 81596250  | 50  | 1,74 | 9,67E-02 | Intron            | CMIP                  |
| <b>chr14</b> | 63230151  | 63230200  | 50  | 1,70 | 3,73E-02 | Intron            | RHOJ                  |
| <b>chr14</b> | 96746601  | 96746650  | 50  | 1,67 | 2,86E-02 | Intron            | LINC02299             |
| <b>chr2</b>  | 26138001  | 26138050  | 50  | 1,66 | 9,75E-02 | Distal Intergenic | GAREM2,RAB10          |
| <b>chr12</b> | 124433251 | 124433300 | 50  | 1,65 | 7,53E-02 | Intron            | NCOR2                 |
| <b>chr10</b> | 1860951   | 1861050   | 100 | 1,65 | 6,38E-02 | Distal Intergenic | ADARB2                |
| <b>chr8</b>  | 25399601  | 25399650  | 50  | 1,63 | 2,35E-02 | Intron            | DOCK5                 |
| <b>chr14</b> | 96746351  | 96746400  | 50  | 1,63 | 9,75E-02 | Intron            | LINC02299             |
| <b>chr8</b>  | 133890051 | 133890100 | 50  | 1,63 | 8,84E-02 | Intron            | LOC101927822          |
| <b>chr2</b>  | 2745801   | 2745850   | 50  | 1,63 | 7,73E-02 | Distal Intergenic | LINC01250             |
| <b>chr2</b>  | 2746001   | 2746050   | 50  | 1,62 | 9,67E-02 | Distal Intergenic | LINC01250             |
| <b>chr19</b> | 45246051  | 45246100  | 50  | 1,61 | 7,69E-02 | Intron            | MARK4,EXOC3L2         |
| <b>chr21</b> | 15133551  | 15133600  | 50  | 1,60 | 6,97E-02 | Distal Intergenic | AF222684.1-201        |
| <b>chr1</b>  | 92611651  | 92611700  | 50  | 1,60 | 6,03E-02 | Intron            | EVI5                  |
| <b>chr2</b>  | 227184901 | 227185000 | 100 | 1,59 | 5,22E-02 | Intron            | COL4A3                |
| <b>chr13</b> | 32597801  | 32597850  | 50  | 1,59 | 4,16E-02 | Intron            | PDS5B                 |
| <b>chr1</b>  | 156716951 | 156717050 | 100 | 1,58 | 8,84E-02 | Distal Intergenic | CRABP2,ISG20L2        |
| <b>chr21</b> | 8463601   | 8463650   | 50  | 1,54 | 6,29E-02 | Distal Intergenic | -                     |
| <b>chr2</b>  | 199821151 | 199821300 | 150 | 1,53 | 5,11E-02 | Intron            | FTCDNL1               |
| <b>chr11</b> | 49295851  | 49295900  | 50  | 1,49 | 6,26E-02 | Distal Intergenic | FOLH1                 |
| <b>chr15</b> | 58873951  | 58874000  | 50  | 1,43 | 9,49E-02 | Intron            | RNF111                |
| <b>chr19</b> | 53223851  | 53223900  | 50  | 1,41 | 9,48E-02 | Distal Intergenic | ZNF665                |
| <b>chr6</b>  | 11709501  | 11709550  | 50  | 1,37 | 9,19E-02 | Distal Intergenic | ADTRP                 |
| <b>chr1</b>  | 15675101  | 15675150  | 50  | 1,37 | 3,35E-02 | Distal Intergenic | PLEKHM2               |
| <b>chr17</b> | 19097751  | 19097800  | 50  | 1,36 | 4,32E-02 | Distal Intergenic | SNORD3D               |
| <b>chr3</b>  | 72022401  | 72022450  | 50  | 1,35 | 2,92E-02 | Distal Intergenic | LINC00870             |
| <b>chr14</b> | 49568901  | 49568950  | 50  | 1,35 | 9,75E-02 | Distal Intergenic | RN7SL1,RPS29          |
| <b>chr7</b>  | 144191001 | 144191150 | 150 | 1,35 | 4,47E-03 | Intron            | ARHGEF35,LOC101928605 |
| <b>chr20</b> | 56560501  | 56560550  | 50  | 1,31 | 7,41E-02 | Distal Intergenic | LINC01716             |
| <b>chr19</b> | 366301    | 366450    | 150 | 1,31 | 7,76E-03 | Intron            | THEG                  |
| <b>chr19</b> | 47196001  | 47196100  | 100 | 1,27 | 5,84E-02 | Intron            | SAE1                  |
| <b>chr12</b> | 64483951  | 64484000  | 50  | 1,24 | 2,52E-02 | Intron            | TBK1                  |
| <b>chr10</b> | 30328801  | 30328850  | 50  | 1,24 | 4,55E-02 | Intron            | MTPAP                 |
| <b>chr4</b>  | 37585101  | 37585150  | 50  | 1,20 | 4,72E-02 | Intron            | C4orf19               |
| <b>chr12</b> | 3075101   | 3075150   | 50  | 1,20 | 9,56E-02 | Promoter          | TSPAN9                |
| <b>chr2</b>  | 49123001  | 49123050  | 50  | 1,17 | 4,25E-02 | Intron            | FSHR                  |
| <b>chr1</b>  | 15675201  | 15675250  | 50  | 1,16 | 2,02E-02 | Distal Intergenic | PLEKHM2               |
| <b>chr13</b> | 50172251  | 50172300  | 50  | 1,15 | 7,42E-02 | Exon              | DLEU1,ST13P4          |
| <b>chr19</b> | 18913001  | 18913050  | 50  | 1,07 | 9,31E-02 | 3' UTR            | COPE,HOMER3           |
| <b>chr2</b>  | 26517901  | 26517950  | 50  | 1,01 | 1,45E-02 | Intron            | OTOF                  |
| <b>chr14</b> | 105055501 | 105055650 | 150 | 0,87 | 4,78E-02 | 5' UTR            | GPR132                |
| <b>chr21</b> | 8454551   | 8454600   | 50  | 0,81 | 9,56E-02 | Distal Intergenic | FP236383.3-202        |
| <b>chr16</b> | 16233251  | 16233350  | 100 | 0,79 | 5,23E-02 | Intron            | MIR3179-4             |

|              |           |           |     |       |          |                   |                     |
|--------------|-----------|-----------|-----|-------|----------|-------------------|---------------------|
| <b>chr17</b> | 61402901  | 61402950  | 50  | 0,77  | 7,32E-02 | Intron            | TBX2-AS1,TBX2       |
| <b>chr19</b> | 54055101  | 54055150  | 50  | 0,59  | 6,29E-02 | Intron            | CACNG6              |
| <b>chr3</b>  | 196099751 | 196099850 | 100 | -0,56 | 1,57E-02 | Distal Intergenic | TFRC                |
| <b>chr12</b> | 59328401  | 59328450  | 50  | -0,65 | 4,24E-02 | Distal Intergenic | SLC16A7             |
| <b>chr15</b> | 75783151  | 75783200  | 50  | -0,65 | 9,75E-02 | Exon              | MIR4313             |
| <b>chr12</b> | 448751    | 448800    | 50  | -0,66 | 5,91E-02 | Distal Intergenic | B4GALNT3            |
| <b>chr20</b> | 47098601  | 47098650  | 50  | -0,67 | 9,07E-02 | Intron            | EYA2                |
| <b>chrX</b>  | 73080851  | 73080900  | 50  | -0,77 | 2,68E-02 | Promoter          | PABPC1L2A           |
| <b>chr6</b>  | 909151    | 909300    | 150 | -0,77 | 1,27E-02 | Distal Intergenic | LINC01622           |
| <b>chr19</b> | 50249551  | 50249600  | 50  | -0,85 | 3,82E-02 | Intron            | MYH14               |
| <b>chrX</b>  | 71541551  | 71541600  | 50  | -0,86 | 6,92E-02 | Intron            | OGT                 |
| <b>chrX</b>  | 73080651  | 73080750  | 100 | -0,87 | 3,86E-02 | Promoter          | PABPC1L2A           |
| <b>chr12</b> | 72758251  | 72758300  | 50  | -0,91 | 8,06E-02 | Distal Intergenic | LINC02444           |
| <b>chr1</b>  | 6103001   | 6103100   | 100 | -0,91 | 6,43E-02 | 3' UTR            | CHD5,KCNAB2         |
| <b>chr18</b> | 76618801  | 76618850  | 50  | -0,91 | 6,26E-02 | Intron            | LINC00683,LINC01927 |
| <b>chrX</b>  | 13050701  | 13050750  | 50  | -0,92 | 6,97E-02 | Distal Intergenic | FAM9C               |
| <b>chr17</b> | 505101    | 505150    | 50  | -0,94 | 9,42E-02 | Intron            | RFLNB,VPS53         |
| <b>chr6</b>  | 909351    | 909600    | 250 | -0,95 | 6,20E-02 | Distal Intergenic | LINC01622           |
| <b>chr4</b>  | 1144451   | 1144600   | 150 | -0,98 | 1,64E-02 | Intron            | TMED11P             |
| <b>chr7</b>  | 158915751 | 158915800 | 50  | -1,03 | 9,75E-02 | Intron            | WDR60               |
| <b>chrX</b>  | 55069801  | 55069900  | 100 | -1,06 | 8,01E-02 | Distal Intergenic | PAGE2B              |
| <b>chr3</b>  | 196099551 | 196099650 | 100 | -1,06 | 4,58E-02 | Distal Intergenic | TFRC                |
| <b>chr1</b>  | 34019751  | 34019800  | 50  | -1,13 | 9,61E-02 | Intron            | CSMD2               |
| <b>chr1</b>  | 6103151   | 6103200   | 50  | -1,13 | 3,65E-02 | 3' UTR            | CHD5,KCNAB2         |
| <b>chr1</b>  | 16780401  | 16780450  | 50  | -1,13 | 7,53E-02 | Intron            | CROCC               |
| <b>chr9</b>  | 129641201 | 129641250 | 50  | -1,17 | 4,72E-02 | Promoter          | ASB6                |
| <b>chr7</b>  | 45084401  | 45084450  | 50  | -1,18 | 8,25E-02 | Exon              | NACAD               |
| <b>chrX</b>  | 102436301 | 102436350 | 50  | -1,20 | 4,32E-02 | Intron            | TMSB15A             |
| <b>chrX</b>  | 3132551   | 3132650   | 100 | -1,20 | 5,52E-02 | Distal Intergenic | ARSF                |
| <b>chr2</b>  | 58573301  | 58573400  | 100 | -1,22 | 6,88E-02 | Intron            | LINC01122           |
| <b>chrX</b>  | 50815401  | 50815450  | 50  | -1,22 | 8,81E-02 | Promoter          | SHROOM4             |
| <b>chr9</b>  | 129060751 | 129060800 | 50  | -1,23 | 9,49E-02 | Intron            | MIGA2               |
| <b>chrX</b>  | 85929051  | 85929100  | 50  | -1,24 | 8,70E-02 | Intron            | CHM                 |
| <b>chrX</b>  | 85929201  | 85929250  | 50  | -1,30 | 3,04E-02 | Intron            | CHM                 |
| <b>chrX</b>  | 46379051  | 46379100  | 50  | -1,33 | 3,82E-02 | Distal Intergenic | LINC01186           |
| <b>chrX</b>  | 53863851  | 53863900  | 50  | -1,34 | 3,82E-02 | Distal Intergenic | HUWE1               |
| <b>chr1</b>  | 16780551  | 16780600  | 50  | -1,35 | 1,45E-02 | Intron            | CROCC               |
| <b>chrX</b>  | 46378901  | 46378950  | 50  | -1,42 | 6,97E-02 | Distal Intergenic | LINC01186           |
| <b>chrX</b>  | 56130201  | 56130250  | 50  | -1,47 | 6,03E-02 | Distal Intergenic | KLF8                |
| <b>chrX</b>  | 56130101  | 56130150  | 50  | -1,47 | 3,95E-02 | Distal Intergenic | KLF8                |
| <b>chr7</b>  | 158915951 | 158916150 | 200 | -1,52 | 5,81E-02 | Intron            | WDR60               |
| <b>chr22</b> | 11818351  | 11818400  | 50  | -1,61 | 7,74E-02 | Distal Intergenic | FRG1FP              |
| <b>chr15</b> | 22141251  | 22141550  | 300 | -1,62 | 5,33E-03 | Distal Intergenic | LOC642131           |
| <b>chr14</b> | 87888801  | 87888850  | 50  | -1,63 | 4,32E-02 | Intron            | GALC                |
| <b>chrX</b>  | 110414551 | 110414600 | 50  | -1,64 | 4,86E-02 | Intron            | RTL9,AMMECR1        |

|              |           |           |     |       |          |                   |              |
|--------------|-----------|-----------|-----|-------|----------|-------------------|--------------|
| <b>chr6</b>  | 166784301 | 166784400 | 100 | -1,64 | 3,72E-02 | Intron            | RPS6KA2      |
| <b>chr1</b>  | 110528501 | 110528550 | 50  | -1,65 | 7,73E-02 | Intron            | KCNA2        |
| <b>chrX</b>  | 48263001  | 48263050  | 50  | -1,68 | 7,96E-02 | Intron            | SSX1         |
| <b>chr22</b> | 11818451  | 11818500  | 50  | -1,69 | 7,90E-02 | Distal Intergenic | FRG1FP       |
| <b>chr7</b>  | 147549301 | 147549350 | 50  | -1,71 | 8,58E-02 | Intron            | LOC105375556 |
| <b>chr7</b>  | 14281701  | 14281750  | 50  | -1,72 | 3,27E-02 | Intron            | DGKB         |
| <b>chrX</b>  | 149887551 | 149887600 | 50  | -1,72 | 9,28E-02 | Distal Intergenic | MAGEA8       |
| <b>chrX</b>  | 32177551  | 32177600  | 50  | -1,73 | 9,56E-02 | Intron            | DMD          |
| <b>chr15</b> | 22141151  | 22141200  | 50  | -1,76 | 1,68E-02 | Distal Intergenic | LOC642131    |
| <b>chr14</b> | 70791701  | 70791750  | 50  | -1,76 | 4,24E-02 | Intron            | MAP3K9       |
| <b>chr22</b> | 11922551  | 11922600  | 50  | -1,88 | 4,72E-02 | Distal Intergenic | FRG1FP       |
| <b>chr7</b>  | 14281501  | 14281550  | 50  | -1,94 | 2,67E-03 | Intron            | DGKB         |
| <b>chr7</b>  | 29355201  | 29355250  | 50  | -2,02 | 7,83E-02 | Intron            | CHN2         |
| <b>chrX</b>  | 150541201 | 150541250 | 50  | -2,06 | 7,73E-02 | Distal Intergenic | MTM1         |
| <b>chr9</b>  | 76575301  | 76575350  | 50  | -2,07 | 2,86E-02 | Intron            | GCNT1        |
| <b>chrX</b>  | 6533751   | 6533850   | 100 | -2,07 | 1,63E-02 | Promoter          | VCX3A        |
| <b>chrX</b>  | 88240651  | 88240700  | 50  | -2,08 | 4,25E-02 | Distal Intergenic | CPXCR1       |
| <b>chrX</b>  | 42943701  | 42943750  | 50  | -2,18 | 3,25E-02 | Distal Intergenic | PPP1R2C      |
| <b>chr1</b>  | 25405901  | 25405950  | 50  | -2,29 | 7,13E-03 | Intron            | RHCE         |
| <b>chr9</b>  | 90970851  | 90970900  | 50  | -2,30 | 4,55E-02 | Distal Intergenic | LINC00484    |
| <b>chr5</b>  | 107490451 | 107490500 | 50  | -2,35 | 7,25E-02 | Intron            | EFNA5        |
| <b>chr1</b>  | 25406201  | 25406450  | 250 | -2,37 | 1,27E-02 | Intron            | RHCE         |
| <b>chr12</b> | 53705251  | 53705300  | 50  | -2,38 | 4,77E-02 | Distal Intergenic | CALCOCO1     |
| <b>chr20</b> | 18197651  | 18197700  | 50  | -2,40 | 4,72E-02 | Distal Intergenic | KAT14        |
| <b>chr10</b> | 4167301   | 4167400   | 100 | -2,40 | 9,75E-02 | Distal Intergenic | LINC00702    |
| <b>chr12</b> | 84754851  | 84754900  | 50  | -2,41 | 7,73E-02 | Distal Intergenic | SLC6A15      |
| <b>chr1</b>  | 25406001  | 25406050  | 50  | -2,48 | 8,44E-05 | Intron            | RHCE         |
| <b>chr22</b> | 15739051  | 15739100  | 50  | -2,52 | 9,75E-02 | Distal Intergenic | LINC01297    |
| <b>chr10</b> | 16663451  | 16663500  | 50  | -2,52 | 9,75E-02 | Intron            | RSU1         |
| <b>chr6</b>  | 51735501  | 51735550  | 50  | -2,54 | 2,20E-02 | Intron            | PKHD1        |
| <b>chr10</b> | 89527201  | 89527300  | 100 | -2,61 | 5,49E-02 | Intron            | SLC16A12     |
| <b>chrX</b>  | 137206451 | 137206500 | 50  | -2,62 | 3,26E-02 | Distal Intergenic | GPR101       |
| <b>chrX</b>  | 147693551 | 147693600 | 50  | -2,66 | 9,67E-02 | Distal Intergenic | FMR1-AS1     |
| <b>chr10</b> | 124292801 | 124292850 | 50  | -2,70 | 2,02E-02 | Distal Intergenic | OAT          |
| <b>chrX</b>  | 137206651 | 137206700 | 50  | -2,73 | 4,72E-02 | Distal Intergenic | GPR101       |
| <b>chr7</b>  | 158916351 | 158916700 | 350 | -2,74 | 4,67E-02 | Intron            | WDR60        |
| <b>chrX</b>  | 28448051  | 28448100  | 50  | -2,83 | 5,91E-02 | Distal Intergenic | MIR6134      |
| <b>chr6</b>  | 51735601  | 51735650  | 50  | -2,89 | 3,20E-03 | Intron            | PKHD1        |
| <b>chr4</b>  | 6650151   | 6650200   | 50  | -2,90 | 7,56E-03 | Intron            | LINC02482    |
| <b>chr14</b> | 71365351  | 71365400  | 50  | -2,92 | 9,56E-02 | Intron            | SIPA1L1      |
| <b>chr7</b>  | 2064251   | 2064300   | 50  | -2,93 | 3,74E-02 | Intron            | MAD1L1       |
| <b>chr9</b>  | 35289801  | 35289850  | 50  | -3,05 | 5,30E-02 | Intron            | UNC13B       |
| <b>chrX</b>  | 120251901 | 120251950 | 50  | -3,09 | 9,28E-02 | Promoter          | ZBTB33       |
| <b>chr20</b> | 52615601  | 52615650  | 50  | -3,09 | 9,28E-02 | Intron            | LINC01524    |
| <b>chrX</b>  | 137206351 | 137206400 | 50  | -3,11 | 3,44E-02 | Distal Intergenic | GPR101       |

|              |           |           |     |       |          |                   |                  |
|--------------|-----------|-----------|-----|-------|----------|-------------------|------------------|
| <b>chr9</b>  | 35289901  | 35289950  | 50  | -3,12 | 2,48E-02 | Intron            | UNC13B           |
| <b>chr12</b> | 72362451  | 72362500  | 50  | -3,27 | 7,53E-02 | Intron            | TRHDE            |
| <b>chr14</b> | 106101151 | 106101200 | 50  | -3,60 | 1,95E-02 | Distal Intergenic | LINC00226        |
| <b>chrX</b>  | 83190601  | 83190650  | 50  | -3,89 | 4,32E-02 | Distal Intergenic | POU3F4           |
| <b>chr3</b>  | 175051801 | 175051900 | 100 | -3,92 | 6,16E-02 | Intron            | NAALADL2         |
| <b>chr6</b>  | 57935601  | 57935650  | 50  | -3,99 | 6,97E-02 | Intron            | LINC00680-GUSBP4 |
| <b>chr4</b>  | 176689501 | 176689550 | 50  | -3,99 | 6,97E-02 | Exon              | VEGFC            |
| <b>chr1</b>  | 71516151  | 71516200  | 50  | -4,15 | 9,61E-02 | Intron            | NEGR1            |
| <b>chr14</b> | 106097001 | 106097050 | 50  | -4,16 | 7,92E-02 | Distal Intergenic | LINC00226        |
| <b>chr2</b>  | 115168651 | 115168750 | 100 | -4,34 | 3,69E-03 | Intron            | DPP10            |
| <b>chr11</b> | 55617151  | 55617250  | 100 | -4,81 | 2,17E-02 | Distal Intergenic | OR4C11           |
| <b>chr18</b> | 45729201  | 45729250  | 50  | -5,12 | 7,53E-02 | 5' UTR            | SLC14A1          |
| <b>chrX</b>  | 123058301 | 123058350 | 50  | -5,12 | 7,53E-02 | Distal Intergenic | GRIA3            |
| <b>chrX</b>  | 82856801  | 82856850  | 50  | -5,12 | 7,53E-02 | Distal Intergenic | POU3F4           |
| <b>chr13</b> | 69469001  | 69469150  | 150 | -5,16 | 5,78E-04 | Distal Intergenic | LINC00383        |
| <b>chrX</b>  | 123058201 | 123058250 | 50  | -5,18 | 4,95E-02 | Distal Intergenic | GRIA3            |
| <b>chr9</b>  | 124658701 | 124658750 | 50  | -5,37 | 8,20E-02 | Promoter          | MIR181A2HG,NR6A1 |
| <b>chrX</b>  | 89767851  | 89767900  | 50  | -5,47 | 3,45E-02 | Distal Intergenic | TGIF2LX          |
| <b>chr1</b>  | 228558351 | 228558400 | 50  | -6,26 | 1,99E-02 | Distal Intergenic | BTNL10           |

#### DiffBind wide window

| Chr          | start     | end       | width | log2fold | adj. p-value | annotation        | associated genes |
|--------------|-----------|-----------|-------|----------|--------------|-------------------|------------------|
| <b>chr1</b>  | 25292446  | 25293163  | 718   | 3,34     | 3,71E-03     | Intron            | RSRP1,RHD        |
| <b>chr1</b>  | 25323259  | 25323603  | 345   | 2,82     | 6,16E-02     | Intron            | RSRP1,RHD        |
| <b>chr16</b> | 952540    | 954220    | 1681  | 2,62     | 9,14E-03     | Exon              | LMF1             |
| <b>chr9</b>  | 61944523  | 61944932  | 410   | 2,46     | 3,95E-03     | Intron            | FAM27C           |
| <b>chr15</b> | 30182742  | 30183080  | 339   | 2,41     | 5,17E-05     | Distal Intergenic | LINC02249        |
| <b>chr9</b>  | 61867523  | 61868052  | 530   | 2,32     | 7,70E-03     | Distal Intergenic | FAM27C           |
| <b>chr11</b> | 70345235  | 70345519  | 285   | 2,31     | 6,47E-02     | Intron            | PPFIA1           |
| <b>chr2</b>  | 240680748 | 240681090 | 343   | 2,28     | 3,50E-02     | Promoter          | AQP12B           |
| <b>chrX</b>  | 268926    | 270514    | 1589  | 2,28     | 4,80E-02     | Distal Intergenic | XG               |
| <b>chr2</b>  | 107906499 | 107906787 | 289   | 2,28     | 7,15E-02     | Distal Intergenic | RGPD4            |
| <b>chr21</b> | 13368082  | 13368420  | 339   | 2,01     | 1,30E-02     | Distal Intergenic | -                |
| <b>chr9</b>  | 63776344  | 63776715  | 372   | 1,80     | 4,50E-02     | Distal Intergenic | LOC286297        |
| <b>chr7</b>  | 144236412 | 144236927 | 516   | 1,77     | 4,33E-02     | Intron            | LOC101928605     |
| <b>chr3</b>  | 128694656 | 128695095 | 440   | 1,70     | 2,50E-02     | Distal Intergenic | RPN1             |
| <b>chr21</b> | 8448539   | 8449728   | 1190  | 1,66     | 4,73E-02     | Distal Intergenic | FP236383.3-202   |
| <b>chr16</b> | 88500924  | 88501785  | 862   | 1,64     | 6,81E-02     | Intron            | ZFPM1            |
| <b>chr13</b> | 18230159  | 18230726  | 568   | 1,60     | 5,74E-02     | Exon              | FAM230C          |
| <b>chr15</b> | 48529745  | 48530427  | 683   | 1,53     | 3,37E-02     | Intron            | FBN1             |
| <b>chr20</b> | 63234004  | 63234398  | 395   | 1,50     | 7,38E-03     | Promoter          | BIRC7,MIR3196    |
| <b>chr10</b> | 30328698  | 30329009  | 312   | 1,43     | 3,96E-03     | Intron            | MTPAP            |
| <b>chr3</b>  | 103896348 | 103896693 | 346   | 1,43     | 3,50E-02     | Distal Intergenic | MIR548AB         |

|              |           |           |     |      |          |                   |                     |
|--------------|-----------|-----------|-----|------|----------|-------------------|---------------------|
| <b>chr10</b> | 65524826  | 65525155  | 330 | 1,38 | 2,38E-02 | Distal Intergenic | LINC01515           |
| <b>chr16</b> | 18286591  | 18286921  | 331 | 1,33 | 4,80E-02 | Distal Intergenic | MIR6770-2           |
| <b>chrX</b>  | 12193586  | 12193975  | 390 | 1,32 | 9,11E-02 | Intron            | FRMPD4              |
| <b>chr6</b>  | 28237312  | 28237616  | 305 | 1,29 | 7,70E-03 | Distal Intergenic | ZSCAN9              |
| <b>chr8</b>  | 109762969 | 109763258 | 290 | 1,29 | 4,80E-02 | Distal Intergenic | SYBU                |
| <b>chr20</b> | 56560647  | 56561031  | 385 | 1,28 | 7,70E-03 | Distal Intergenic | LINC01716           |
| <b>chr9</b>  | 62039183  | 62039604  | 422 | 1,26 | 7,70E-03 | Intron            | FAM27C              |
| <b>chr16</b> | 19934436  | 19934742  | 307 | 1,26 | 4,43E-02 | Distal Intergenic | GPRC5B              |
| <b>chr4</b>  | 15884899  | 15885193  | 295 | 1,24 | 5,93E-02 | Distal Intergenic | FGFBP1              |
| <b>chr1</b>  | 120465046 | 120465479 | 434 | 1,24 | 9,14E-02 | Exon              | NBPF8               |
| <b>chr12</b> | 64483872  | 64484249  | 378 | 1,22 | 7,70E-03 | Exon              | TBK1                |
| <b>chr2</b>  | 39005664  | 39006012  | 349 | 1,21 | 3,09E-02 | Intron            | SOS1                |
| <b>chr6</b>  | 149983781 | 149984605 | 825 | 1,18 | 5,07E-02 | Distal Intergenic | ULBP1               |
| <b>chr2</b>  | 128921270 | 128921584 | 315 | 1,18 | 6,16E-02 | Distal Intergenic | LINC01854           |
| <b>chr20</b> | 23316554  | 23316854  | 301 | 1,17 | 2,34E-02 | Distal Intergenic | NXT1                |
| <b>chr9</b>  | 118140757 | 118141085 | 329 | 1,16 | 1,41E-02 | Distal Intergenic | TLR4                |
| <b>chr2</b>  | 7165126   | 7165427   | 302 | 1,16 | 4,03E-02 | Distal Intergenic | LOC101929452        |
| <b>chr7</b>  | 144363448 | 144363881 | 434 | 1,16 | 8,68E-02 | Exon              | ARHGEF5             |
| <b>chr11</b> | 109294490 | 109294799 | 310 | 1,15 | 9,97E-02 | Distal Intergenic | C11orf87            |
| <b>chr2</b>  | 219593845 | 219594219 | 375 | 1,14 | 4,05E-02 | Distal Intergenic | STK11IP             |
| <b>chr22</b> | 42660813  | 42661116  | 304 | 1,14 | 7,74E-02 | Distal Intergenic | CYB5R3              |
| <b>chr9</b>  | 30181504  | 30181782  | 279 | 1,13 | 9,12E-02 | Distal Intergenic | LINC01242           |
| <b>chr5</b>  | 89033043  | 89033454  | 412 | 1,12 | 7,61E-02 | Intron            | MEF2C-AS1           |
| <b>chr7</b>  | 3160844   | 3161143   | 300 | 1,12 | 7,74E-02 | Intron            | LOC100129603        |
| <b>chr4</b>  | 127548091 | 127548474 | 384 | 1,10 | 1,63E-02 | Distal Intergenic | INTU                |
| <b>chr9</b>  | 341512    | 341785    | 274 | 1,10 | 5,93E-02 | Intron            | DOCK8               |
| <b>chr8</b>  | 18155143  | 18155434  | 292 | 1,10 | 8,49E-02 | Distal Intergenic | NAT1                |
| <b>chr10</b> | 109968563 | 109968873 | 311 | 1,09 | 3,00E-02 | Intron            | ADD3-AS1            |
| <b>chr10</b> | 61487775  | 61488056  | 282 | 1,08 | 7,38E-03 | Distal Intergenic | TMEM26              |
| <b>chr1</b>  | 181539087 | 181539408 | 322 | 1,08 | 9,65E-02 | Intron            | CACNA1E             |
| <b>chr5</b>  | 15454662  | 15455001  | 340 | 1,07 | 7,65E-02 | Distal Intergenic | FBXL7               |
| <b>chr8</b>  | 63776758  | 63777174  | 417 | 1,07 | 7,77E-02 | Intron            | LINC01414,LINC01289 |
| <b>chr1</b>  | 80236173  | 80236514  | 342 | 1,07 | 9,55E-02 | Distal Intergenic | LINC01781           |
| <b>chr16</b> | 49399328  | 49399675  | 348 | 1,06 | 8,79E-02 | 3' UTR            | C16orf78            |
| <b>chr18</b> | 3726226   | 3726623   | 398 | 1,05 | 7,40E-03 | Intron            | DLGAP1              |
| <b>chr4</b>  | 23659029  | 23659346  | 318 | 1,05 | 7,71E-02 | Intron            | PPARGC1A            |
| <b>chr1</b>  | 12369040  | 12369323  | 284 | 1,04 | 5,79E-02 | Intron            | VPS13D              |
| <b>chr6</b>  | 36338257  | 36338622  | 366 | 1,04 | 8,35E-02 | Promoter          | C6orf222            |
| <b>chr2</b>  | 143013079 | 143013446 | 368 | 1,03 | 5,68E-02 | Intron            | KYNU                |
| <b>chr11</b> | 113213884 | 113214287 | 404 | 1,03 | 5,93E-02 | Intron            | NCAM1               |
| <b>chr2</b>  | 47563126  | 47563527  | 402 | 1,01 | 7,70E-03 | 3' UTR            | MSH2,KCNK12         |
| <b>chr4</b>  | 80165836  | 80166342  | 507 | 1,01 | 1,65E-02 | Distal Intergenic | PRDM8               |
| <b>chr2</b>  | 176676762 | 176677116 | 355 | 1,00 | 2,35E-02 | Distal Intergenic | LINC01117           |
| <b>chr9</b>  | 72892924  | 72893210  | 287 | 1,00 | 7,74E-02 | Distal Intergenic | LINC01474           |
| <b>chr2</b>  | 58367141  | 58367441  | 301 | 1,00 | 9,74E-02 | Distal Intergenic | LINC01122           |

| chr   | Start     | End       | Length | P-value | Score    | Type              | Gene                |
|-------|-----------|-----------|--------|---------|----------|-------------------|---------------------|
| chr1  | 234964470 | 234964881 | 412    | 0,99    | 7,70E-03 | Intron            | LOC101927851        |
| chr16 | 66852301  | 66852691  | 391    | 0,98    | 5,07E-02 | Intron            | CA7,NAE1            |
| chr7  | 42051849  | 42052172  | 324    | 0,98    | 5,07E-02 | Intron            | GLI3                |
| chr7  | 130820136 | 130820609 | 474    | 0,97    | 3,00E-02 | Intron            | LINC-PINT           |
| chr12 | 62086978  | 62087251  | 274    | 0,97    | 7,65E-02 | Intron            | TAFA2               |
| chr7  | 43064909  | 43065335  | 427    | 0,97    | 8,79E-02 | Intron            | HECW1               |
| chr6  | 14376812  | 14377112  | 301    | 0,97    | 9,90E-02 | Distal Intergenic | LINC01108           |
| chr5  | 165869356 | 165869707 | 352    | 0,96    | 7,65E-02 | Distal Intergenic | LINC01947           |
| chr8  | 123875832 | 123876300 | 469    | 0,95    | 7,71E-02 | Intron            | FER1L6              |
| chr14 | 105055414 | 105055805 | 392    | 0,94    | 1,13E-02 | 5' UTR            | GPR132              |
| chr4  | 125364004 | 125364413 | 410    | 0,94    | 8,79E-02 | Intron            | FAT4                |
| chr1  | 152329499 | 152329989 | 491    | 0,92    | 3,91E-02 | Intron            | FLG-AS1,FLG         |
| chr2  | 26517832  | 26518165  | 334    | 0,91    | 5,87E-02 | Intron            | OTOF                |
| chr14 | 78300899  | 78301296  | 398    | 0,91    | 5,93E-02 | Intron            | NRXN3               |
| chr14 | 74760205  | 74760489  | 285    | 0,91    | 9,68E-02 | Promoter          | YLPM1               |
| chr3  | 197065893 | 197066460 | 568    | 0,90    | 7,74E-02 | Intron            | DLG1                |
| chr4  | 17405043  | 17405424  | 382    | 0,89    | 7,15E-02 | Distal Intergenic | SNORA75B            |
| chr2  | 138584288 | 138584965 | 678    | 0,89    | 7,65E-02 | Distal Intergenic | SPOPL               |
| chr12 | 131050488 | 131050816 | 329    | 0,88    | 2,34E-02 | Intron            | ADGRD1              |
| chr13 | 48274225  | 48274634  | 410    | 0,87    | 5,93E-02 | Distal Intergenic | RB1,ITM2B           |
| chr16 | 80123355  | 80123905  | 551    | 0,86    | 5,07E-02 | Intron            | MAFTRR              |
| chr3  | 154343227 | 154343625 | 399    | 0,85    | 5,61E-02 | Intron            | GPR149              |
| chr5  | 125122782 | 125123235 | 454    | 0,84    | 7,71E-02 | Intron            | LINC02240           |
| chr17 | 61402455  | 61403105  | 651    | 0,83    | 4,43E-02 | 3' UTR            | TBX2-AS1,TBX2       |
| chr20 | 59755679  | 59756225  | 547    | 0,82    | 7,74E-02 | Intron            | PHACTR3             |
| chr10 | 11920866  | 11921394  | 529    | 0,81    | 9,23E-02 | 3' UTR            | UPF2                |
| chr8  | 70140129  | 70140489  | 361    | 0,78    | 5,93E-02 | Intron            | NCOA2               |
| chr4  | 152596881 | 152597227 | 347    | 0,78    | 6,19E-02 | Distal Intergenic | MIR4453             |
| chr21 | 8464546   | 8465217   | 672    | 0,78    | 9,55E-02 | Distal Intergenic | -                   |
| chr1  | 95060006  | 95060365  | 360    | 0,78    | 9,84E-02 | Intron            | ALG14,LOC101928098  |
| chr16 | 25794953  | 25795544  | 592    | 0,75    | 8,68E-02 | Intron            | HS3ST4              |
| chr6  | 123846716 | 123847097 | 382    | 0,69    | 6,79E-02 | Intron            | NKAIN2              |
| chr7  | 45253163  | 45253643  | 481    | 0,67    | 7,65E-02 | Distal Intergenic | RAMP3               |
| chr20 | 34742322  | 34742774  | 453    | 0,66    | 7,71E-02 | Exon              | NCOA6               |
| chr15 | 36909528  | 36910034  | 507    | 0,66    | 9,11E-02 | Intron            | MEIS2               |
| chr17 | 39725183  | 39725612  | 430    | 0,61    | 9,97E-02 | 3' UTR            | ERBB2,MIR4728,MIEN1 |
| chr15 | 31791857  | 31792622  | 766    | -0,54   | 6,79E-02 | Intron            | OTUD7A              |
| chr15 | 29384204  | 29384946  | 743    | -0,55   | 5,68E-02 | Intron            | LOC100130111        |
| chr12 | 59328151  | 59328750  | 600    | -0,62   | 4,50E-02 | Distal Intergenic | SLC16A7             |
| chr2  | 113330573 | 113330968 | 396    | -0,63   | 4,87E-02 | Distal Intergenic | PAX8                |
| chr15 | 101438573 | 101439335 | 763    | -0,63   | 9,97E-02 | Intron            | PCSK6               |
| chr2  | 9909349   | 9909736   | 388    | -0,64   | 9,65E-02 | Intron            | TAF1B               |
| chr3  | 196098723 | 196100292 | 1570   | -0,66   | 6,14E-02 | Distal Intergenic | TFRC                |
| chr3  | 13139948  | 13140350  | 403    | -0,70   | 9,97E-02 | Intron            | IQSEC1              |
| chrX  | 19543250  | 19543988  | 739    | -0,74   | 2,34E-02 | Intron            | SH3KBP1             |

|              |           |           |     |       |          |                   |                     |
|--------------|-----------|-----------|-----|-------|----------|-------------------|---------------------|
| <b>chr6</b>  | 99710980  | 99711683  | 704 | -0,75 | 5,21E-02 | Distal Intergenic | PRDM13              |
| <b>chr8</b>  | 21564253  | 21564668  | 416 | -0,75 | 5,93E-02 | Distal Intergenic | GFRA2               |
| <b>chr6</b>  | 153860938 | 153861412 | 475 | -0,77 | 1,51E-02 | Distal Intergenic | OPRM1               |
| <b>chr18</b> | 11430292  | 11430865  | 574 | -0,77 | 7,15E-02 | Distal Intergenic | LINC01928           |
| <b>chrX</b>  | 32357519  | 32358011  | 493 | -0,77 | 7,71E-02 | Intron            | DMD                 |
| <b>chr4</b>  | 113983355 | 113983699 | 345 | -0,78 | 9,68E-02 | Distal Intergenic | ARSJ                |
| <b>chr6</b>  | 38397668  | 38398082  | 415 | -0,79 | 6,85E-02 | Intron            | BTBD9               |
| <b>chr20</b> | 40591720  | 40592100  | 381 | -0,83 | 4,05E-02 | Distal Intergenic | MAFB                |
| <b>chr11</b> | 8309097   | 8309445   | 349 | -0,85 | 9,75E-02 | Distal Intergenic | LMO1                |
| <b>chr8</b>  | 29048909  | 29049484  | 576 | -0,87 | 4,50E-02 | 3' UTR            | HMBOX1              |
| <b>chr3</b>  | 169667729 | 169668083 | 355 | -0,87 | 6,67E-02 | Distal Intergenic | MECOM               |
| <b>chr12</b> | 123891374 | 123891655 | 282 | -0,88 | 6,37E-02 | Intron            | ZNF664              |
| <b>chrX</b>  | 50185734  | 50186096  | 363 | -0,89 | 4,55E-02 | Distal Intergenic | AKAP4               |
| <b>chrX</b>  | 132206020 | 132206380 | 361 | -0,89 | 7,65E-02 | Intron            | RAP2C               |
| <b>chrX</b>  | 7189691   | 7190082   | 392 | -0,90 | 7,65E-02 | Distal Intergenic | STS                 |
| <b>chrX</b>  | 101136018 | 101136420 | 403 | -0,91 | 1,13E-02 | Intron            | CENPI               |
| <b>chrX</b>  | 55069701  | 55070130  | 430 | -0,91 | 7,15E-02 | Distal Intergenic | PAGE2B              |
| <b>chrX</b>  | 121681653 | 121682540 | 888 | -0,92 | 4,80E-02 | Distal Intergenic | MIR3672             |
| <b>chrX</b>  | 18076768  | 18077182  | 415 | -0,93 | 3,00E-02 | Intron            | LINC01456           |
| <b>chr16</b> | 69755715  | 69756075  | 361 | -0,93 | 8,28E-02 | Promoter          | NOB1                |
| <b>chrX</b>  | 150808754 | 150809078 | 325 | -0,93 | 9,65E-02 | Intron            | CD99L2              |
| <b>chrX</b>  | 22665040  | 22665413  | 374 | -0,94 | 5,21E-02 | Intron            | PTCHD1-AS           |
| <b>chr12</b> | 68406085  | 68406642  | 558 | -0,95 | 5,07E-02 | Intron            | LINC02384           |
| <b>chr7</b>  | 72006797  | 72007150  | 354 | -0,95 | 6,67E-02 | Intron            | CALN1               |
| <b>chrX</b>  | 153415777 | 153416124 | 348 | -0,95 | 6,96E-02 | Promoter          | ZFP92               |
| <b>chrX</b>  | 93991247  | 93991572  | 326 | -0,95 | 7,71E-02 | Distal Intergenic | FAM133A             |
| <b>chrX</b>  | 15685167  | 15685568  | 402 | -0,95 | 7,88E-02 | Intron            | CA5BP1,CA5B         |
| <b>chrX</b>  | 63959775  | 63960115  | 341 | -0,95 | 9,33E-02 | Distal Intergenic | ARHGEF9             |
| <b>chr22</b> | 35351420  | 35351749  | 330 | -0,96 | 4,50E-02 | Distal Intergenic | MIR6069,TOM1        |
| <b>chr8</b>  | 77712716  | 77713039  | 324 | -0,96 | 9,97E-02 | Distal Intergenic | LOC102724874        |
| <b>chrX</b>  | 9672381   | 9672868   | 488 | -0,97 | 1,04E-02 | Intron            | TBL1X               |
| <b>chr15</b> | 34423023  | 34423365  | 343 | -0,99 | 7,40E-03 | Intron            | MIR1233-2,GOLGA8A   |
| <b>chr18</b> | 76618556  | 76618929  | 374 | -1,00 | 4,05E-02 | Intron            | LINC00683,LINC01927 |
| <b>chrX</b>  | 138336585 | 138336959 | 375 | -1,02 | 7,74E-02 | Distal Intergenic | MIR504              |
| <b>chr3</b>  | 39480691  | 39481132  | 442 | -1,02 | 8,49E-02 | Intron            | MOBP                |
| <b>chr8</b>  | 104348090 | 104348464 | 375 | -1,03 | 7,40E-03 | Intron            | DPYS,DCSTAMP        |
| <b>chr13</b> | 109314084 | 109314469 | 386 | -1,03 | 5,68E-02 | Distal Intergenic | LINC00399           |
| <b>chr14</b> | 23925296  | 23925783  | 488 | -1,03 | 5,69E-02 | Intron            | DHRS4               |
| <b>chrX</b>  | 89762472  | 89762789  | 318 | -1,04 | 6,37E-02 | Distal Intergenic | TGIF2LX             |
| <b>chr19</b> | 30742950  | 30743417  | 468 | -1,05 | 4,80E-02 | Distal Intergenic | LINC01791           |
| <b>chr8</b>  | 58401934  | 58402286  | 353 | -1,05 | 5,07E-02 | Distal Intergenic | UBXN2B              |
| <b>chr11</b> | 115562907 | 115563271 | 365 | -1,07 | 1,41E-02 | Distal Intergenic | CADM1               |
| <b>chrX</b>  | 125801234 | 125801545 | 312 | -1,08 | 4,50E-02 | Distal Intergenic | LOC101928495        |
| <b>chrX</b>  | 54245326  | 54245732  | 407 | -1,08 | 6,85E-02 | Intron            | WNK3                |
| <b>chrX</b>  | 13050487  | 13050922  | 436 | -1,11 | 7,38E-03 | Distal Intergenic | FAM9C               |

|              |           |           |      |       |          |                   |                           |
|--------------|-----------|-----------|------|-------|----------|-------------------|---------------------------|
| <b>chrX</b>  | 17812564  | 17812970  | 407  | -1,12 | 2,50E-02 | Intron            | RAI2                      |
| <b>chrX</b>  | 67106461  | 67106783  | 323  | -1,12 | 3,00E-02 | Distal Intergenic | AR                        |
| <b>chr11</b> | 105460681 | 105461081 | 401  | -1,15 | 7,38E-03 | Intron            | CARD18                    |
| <b>chrX</b>  | 15529210  | 15529517  | 308  | -1,17 | 1,51E-02 | Intron            | BMX                       |
| <b>chr6</b>  | 113752552 | 113752955 | 404  | -1,18 | 6,67E-02 | Distal Intergenic | LINC02541                 |
| <b>chrX</b>  | 74292249  | 74292667  | 419  | -1,18 | 8,68E-02 | Promoter          | FTX,MIR374A               |
| <b>chrX</b>  | 64248528  | 64248888  | 361  | -1,19 | 7,74E-02 | Distal Intergenic | ASB12                     |
| <b>chr7</b>  | 68650297  | 68650619  | 323  | -1,20 | 5,07E-02 | Distal Intergenic | LOC102723427              |
| <b>chr4</b>  | 135169415 | 135170242 | 828  | -1,22 | 7,38E-03 | Distal Intergenic | LINC02485                 |
| <b>chr3</b>  | 26242309  | 26242695  | 387  | -1,22 | 7,38E-03 | Distal Intergenic | LINC00692                 |
| <b>chr10</b> | 490113    | 490516    | 404  | -1,22 | 8,79E-02 | Intron            | DIP2C                     |
| <b>chrX</b>  | 85929139  | 85929538  | 400  | -1,26 | 1,82E-03 | Intron            | CHM                       |
| <b>chr10</b> | 44662615  | 44663049  | 435  | -1,27 | 6,93E-02 | Distal Intergenic | TMEM72                    |
| <b>chrX</b>  | 124465548 | 124465914 | 367  | -1,28 | 7,38E-03 | Intron            | TENM1                     |
| <b>chr8</b>  | 12484419  | 12484956  | 538  | -1,29 | 7,38E-03 | Intron            | LOC729732                 |
| <b>chr9</b>  | 42740753  | 42741167  | 415  | -1,39 | 7,65E-02 | Distal Intergenic | LOC101927827              |
| <b>chrX</b>  | 113447866 | 113448169 | 304  | -1,41 | 6,79E-02 | Distal Intergenic | AMOT                      |
| <b>chrX</b>  | 29379691  | 29380061  | 371  | -1,42 | 1,46E-02 | Intron            | IL1RAPL1                  |
| <b>chr15</b> | 21282529  | 21282914  | 386  | -1,45 | 8,68E-02 | Distal Intergenic | MIR3118-3,POTE, MIR5701-3 |
| <b>chr4</b>  | 60572610  | 60572978  | 369  | -1,46 | 7,71E-02 | Distal Intergenic | MIR548AG1                 |
| <b>chr20</b> | 47832388  | 47832833  | 446  | -1,53 | 7,71E-02 | Distal Intergenic | SULF2                     |
| <b>chr1</b>  | 161458425 | 161459908 | 1484 | -1,78 | 7,38E-03 | Intron            | FCGR2A                    |
| <b>chr10</b> | 45732890  | 45733196  | 307  | -1,79 | 2,35E-02 | Intron            | WASHC2C                   |
| <b>chr17</b> | 46396140  | 46397322  | 1183 | -1,93 | 7,15E-02 | Intron            | MIR4315-2                 |
| <b>chrX</b>  | 149731633 | 149732076 | 444  | -1,95 | 5,19E-02 | Distal Intergenic | MAGEA11                   |
| <b>chr3</b>  | 159681719 | 159682162 | 444  | -1,96 | 3,01E-02 | Intron            | IQCJ-SCHIP1,SCHIP1        |
| <b>chr22</b> | 11837417  | 11837952  | 536  | -2,03 | 9,68E-02 | Distal Intergenic | FRG1FP                    |
| <b>chr13</b> | 20119461  | 20119837  | 377  | -2,07 | 4,50E-02 | Distal Intergenic | LINC01072                 |
| <b>chr1</b>  | 25406068  | 25406495  | 428  | -2,25 | 7,38E-03 | Intron            | RHCE                      |
| <b>chr9</b>  | 42600548  | 42600962  | 415  | -2,46 | 7,38E-03 | Distal Intergenic | LOC101927827              |
| <b>chr17</b> | 83232087  | 83232489  | 403  | -3,02 | 7,40E-03 | Intron            | RPL23AP87                 |
| <b>chr11</b> | 130438    | 131057    | 620  | -3,40 | 7,70E-03 | Exon              | LINC01001                 |
| <b>chr14</b> | 106757811 | 106758265 | 455  | -4,35 | 7,38E-03 | Distal Intergenic | MIR5195                   |
| <b>chr1</b>  | 228557690 | 228558459 | 770  | -4,76 | 7,70E-03 | Exon              | BTNL10                    |

### DiffBind narrow window

| Chr          | start    | end      | width | log2fold | adj. p-value | annotation        | associated genes |
|--------------|----------|----------|-------|----------|--------------|-------------------|------------------|
| <b>chr16</b> | 953843   | 953893   | 51    | 5,69     | 2,77E-05     | Intron            | LMF1             |
| <b>chr1</b>  | 25292695 | 25292745 | 51    | 3,42     | 2,77E-05     | Intron            | RSRP1,RHD        |
| <b>chr1</b>  | 25323341 | 25323391 | 51    | 3,19     | 1,13E-02     | Intron            | RSRP1,RHD        |
| <b>chr9</b>  | 61944687 | 61944737 | 51    | 2,86     | 1,79E-03     | Intron            | FAM27C           |
| <b>chr21</b> | 13368336 | 13368386 | 51    | 2,86     | 1,21E-02     | Distal Intergenic | -                |

|       |           |           |    |      |          |                   |                     |
|-------|-----------|-----------|----|------|----------|-------------------|---------------------|
| chr15 | 30182939  | 30182989  | 51 | 2,53 | 4,51E-05 | Distal Intergenic | LINC02249           |
| chr15 | 48530201  | 48530251  | 51 | 2,47 | 1,55E-03 | Intron            | FBN1                |
| chr3  | 128694830 | 128694880 | 51 | 2,40 | 1,13E-02 | Distal Intergenic | RPN1                |
| chr9  | 61867665  | 61867715  | 51 | 2,33 | 6,03E-02 | Distal Intergenic | FAM27C              |
| chr2  | 240680899 | 240680949 | 51 | 2,32 | 4,10E-02 | Promoter          | AQP12B              |
| chr11 | 70345473  | 70345523  | 51 | 2,25 | 8,62E-02 | Intron            | PPFIA1              |
| chr20 | 63234294  | 63234344  | 51 | 2,00 | 3,63E-02 | Promoter          | BIRC7,MIR3196       |
| chr16 | 88501484  | 88501534  | 51 | 1,93 | 8,21E-02 | Intron            | ZFPM1               |
| chr4  | 37585212  | 37585262  | 51 | 1,90 | 8,71E-02 | Intron            | C4orf19             |
| chr4  | 120254207 | 120254257 | 51 | 1,79 | 5,20E-02 | Intron            | MAD2L1              |
| chr21 | 8449677   | 8449727   | 51 | 1,71 | 5,20E-02 | Distal Intergenic | FP236383.3-202      |
| chr10 | 46860760  | 46860810  | 51 | 1,58 | 9,57E-02 | Distal Intergenic | FRMPD2B             |
| chr7  | 3299406   | 3299456   | 51 | 1,57 | 2,00E-02 | Promoter          | SDK1                |
| chr4  | 119835902 | 119835952 | 51 | 1,56 | 5,07E-02 | Distal Intergenic | LINC01365           |
| chr3  | 103896484 | 103896534 | 51 | 1,55 | 7,49E-02 | Distal Intergenic | MIR548AB            |
| chr10 | 30328831  | 30328881  | 51 | 1,54 | 1,55E-03 | Intron            | MTPAP               |
| chr8  | 109763044 | 109763094 | 51 | 1,52 | 3,63E-03 | Distal Intergenic | SYBU                |
| chr16 | 23748999  | 23749049  | 51 | 1,51 | 8,74E-02 | Distal Intergenic | CHP2                |
| chr12 | 64483999  | 64484049  | 51 | 1,49 | 1,71E-02 | Exon              | TBK1                |
| chr5  | 26640171  | 26640221  | 51 | 1,48 | 8,06E-02 | Distal Intergenic | CDH9                |
| chr14 | 53150027  | 53150077  | 51 | 1,45 | 3,40E-02 | 5' UTR            | DDHD1,LOC101927620  |
| chr2  | 128921387 | 128921437 | 51 | 1,45 | 7,88E-02 | Distal Intergenic | LINC01854           |
| chr1  | 69099263  | 69099313  | 51 | 1,44 | 3,51E-02 | Intron            | LINC01707           |
| chr5  | 89033162  | 89033212  | 51 | 1,43 | 7,67E-02 | Intron            | MEF2C-AS1           |
| chr10 | 44613339  | 44613389  | 51 | 1,42 | 5,75E-02 | Distal Intergenic | CXCL12              |
| chr12 | 89438411  | 89438461  | 51 | 1,41 | 8,51E-02 | Intron            | POC1B               |
| chr16 | 18286711  | 18286761  | 51 | 1,40 | 5,07E-02 | Distal Intergenic | MIR6770-2           |
| chr4  | 127548324 | 127548374 | 51 | 1,39 | 2,36E-02 | Distal Intergenic | INTU                |
| chr21 | 9666813   | 9666863   | 51 | 1,37 | 6,03E-02 | Distal Intergenic | AC124864.2-201      |
| chr4  | 80166018  | 80166068  | 51 | 1,37 | 8,21E-02 | Distal Intergenic | PRDM8               |
| chr5  | 157200085 | 157200135 | 51 | 1,35 | 2,23E-02 | Intron            | ITK                 |
| chr14 | 54439464  | 54439514  | 51 | 1,34 | 5,09E-02 | Promoter          | CNIH1               |
| chr2  | 229208785 | 229208835 | 51 | 1,33 | 8,51E-02 | Intron            | PID1                |
| chr8  | 37143004  | 37143054  | 51 | 1,30 | 8,51E-02 | Distal Intergenic | KCNU1               |
| chr1  | 58773156  | 58773206  | 51 | 1,29 | 5,22E-02 | Distal Intergenic | JUN                 |
| chr7  | 109161739 | 109161789 | 51 | 1,26 | 9,57E-02 | Distal Intergenic | C7orf66             |
| chr11 | 109294678 | 109294728 | 51 | 1,25 | 8,71E-02 | Distal Intergenic | C11orf87            |
| chr1  | 80330845  | 80330895  | 51 | 1,25 | 9,32E-02 | Distal Intergenic | LINC01781           |
| chr15 | 94013994  | 94014044  | 51 | 1,25 | 9,85E-02 | Intron            | LINC01581,LINC01579 |
| chr9  | 62039317  | 62039367  | 51 | 1,24 | 1,36E-02 | Intron            | FAM27C              |
| chr6  | 28237372  | 28237422  | 51 | 1,23 | 3,40E-02 | Distal Intergenic | ZSCAN9              |
| chr20 | 56560762  | 56560812  | 51 | 1,23 | 7,13E-02 | Distal Intergenic | LINC01716           |
| chr8  | 117867342 | 117867392 | 51 | 1,23 | 7,65E-02 | Intron            | EXT1                |
| chr11 | 113213998 | 113214048 | 51 | 1,20 | 4,69E-02 | Intron            | NCAM1               |
| chr5  | 15454727  | 15454777  | 51 | 1,20 | 6,03E-02 | Distal Intergenic | FBXL7               |

|              |           |           |    |      |          |                   |                     |
|--------------|-----------|-----------|----|------|----------|-------------------|---------------------|
| <b>chr3</b>  | 101839985 | 101840035 | 51 | 1,20 | 8,51E-02 | Intron            | NFKBIZ              |
| <b>chr2</b>  | 39005876  | 39005926  | 51 | 1,19 | 5,20E-02 | Intron            | SOS1                |
| <b>chr9</b>  | 1356734   | 1356784   | 51 | 1,19 | 5,20E-02 | Distal Intergenic | DMRT2               |
| <b>chr5</b>  | 165869569 | 165869619 | 51 | 1,17 | 4,24E-02 | Distal Intergenic | LINC01947           |
| <b>chr13</b> | 36870392  | 36870442  | 51 | 1,17 | 8,33E-02 | Intron            | SMAD9               |
| <b>chr20</b> | 23316654  | 23316704  | 51 | 1,16 | 7,88E-02 | Distal Intergenic | NXT1                |
| <b>chr16</b> | 66852529  | 66852579  | 51 | 1,16 | 8,51E-02 | Intron            | CA7,NAE1            |
| <b>chr12</b> | 26209786  | 26209836  | 51 | 1,15 | 6,51E-02 | Intron            | SSPN                |
| <b>chr12</b> | 12439761  | 12439811  | 51 | 1,15 | 8,91E-02 | Intron            | BORCS5              |
| <b>chr17</b> | 4540857   | 4540907   | 51 | 1,14 | 4,69E-02 | Intron            | MYBBP1A,SPNS2       |
| <b>chr6</b>  | 14376962  | 14377012  | 51 | 1,12 | 4,77E-02 | Distal Intergenic | LINC01108           |
| <b>chr14</b> | 99637138  | 99637188  | 51 | 1,08 | 1,13E-02 | Distal Intergenic | HHIPL1              |
| <b>chr5</b>  | 10132486  | 10132536  | 51 | 1,08 | 4,77E-02 | Distal Intergenic | CCT5                |
| <b>chr10</b> | 61487853  | 61487903  | 51 | 1,07 | 2,36E-02 | Distal Intergenic | TMEM26              |
| <b>chr1</b>  | 152329703 | 152329753 | 51 | 1,07 | 5,20E-02 | Intron            | FLG-AS1,FLG         |
| <b>chr13</b> | 73209578  | 73209628  | 51 | 1,06 | 6,83E-02 | Distal Intergenic | KLF5                |
| <b>chr1</b>  | 12369197  | 12369247  | 51 | 1,06 | 7,29E-02 | Intron            | VPS13D              |
| <b>chr9</b>  | 118140848 | 118140898 | 51 | 1,05 | 6,71E-02 | Distal Intergenic | TLR4                |
| <b>chr11</b> | 87967848  | 87967898  | 51 | 1,05 | 9,32E-02 | Intron            | RAB38               |
| <b>chr10</b> | 109968603 | 109968653 | 51 | 1,04 | 4,96E-02 | Intron            | ADD3-AS1            |
| <b>chr7</b>  | 42051973  | 42052023  | 51 | 1,04 | 5,20E-02 | Intron            | GLI3                |
| <b>chr18</b> | 3726434   | 3726484   | 51 | 1,03 | 1,61E-02 | Intron            | DLGAP1              |
| <b>chr2</b>  | 176676925 | 176676975 | 51 | 1,01 | 4,27E-02 | Distal Intergenic | LINC01116           |
| <b>chr11</b> | 94974765  | 94974815  | 51 | 1,01 | 9,91E-02 | Promoter          | KDM4D,CWC15         |
| <b>chr1</b>  | 2325192   | 2325242   | 51 | 1,00 | 6,46E-02 | Intron            | MORN1               |
| <b>chr19</b> | 36121176  | 36121226  | 51 | 1,00 | 7,29E-02 | Intron            | TBCB                |
| <b>chr11</b> | 44061422  | 44061472  | 51 | 1,00 | 8,91E-02 | Distal Intergenic | ACCS,ACCSL          |
| <b>chr1</b>  | 243721055 | 243721105 | 51 | 0,99 | 8,51E-02 | Intron            | LOC339529           |
| <b>chr10</b> | 11920938  | 11920988  | 51 | 0,99 | 8,51E-02 | 3' UTR            | UPF2                |
| <b>chr3</b>  | 162717680 | 162717730 | 51 | 0,98 | 2,36E-02 | Distal Intergenic | LINC01192           |
| <b>chr11</b> | 78451538  | 78451588  | 51 | 0,98 | 7,29E-02 | Intron            | NARS2               |
| <b>chr12</b> | 131050659 | 131050709 | 51 | 0,97 | 4,76E-02 | Intron            | ADGRD1              |
| <b>chr2</b>  | 225212517 | 225212567 | 51 | 0,97 | 7,88E-02 | Distal Intergenic | DOCK10              |
| <b>chr2</b>  | 82820655  | 82820705  | 51 | 0,95 | 5,20E-02 | Distal Intergenic | DHFRP3              |
| <b>chr14</b> | 105055545 | 105055595 | 51 | 0,94 | 4,65E-02 | 5' UTR            | GPR132              |
| <b>chr1</b>  | 95060117  | 95060167  | 51 | 0,94 | 4,99E-02 | Intron            | ALG14,LOC101928098  |
| <b>chr2</b>  | 26517899  | 26517949  | 51 | 0,94 | 7,90E-02 | Intron            | OTOF                |
| <b>chr18</b> | 43085006  | 43085056  | 51 | 0,94 | 8,51E-02 | Intron            | RIT2                |
| <b>chr3</b>  | 147397863 | 147397913 | 51 | 0,92 | 8,51E-02 | Intron            | LOC440982,ZIC1,ZIC4 |
| <b>chr10</b> | 91426572  | 91426622  | 51 | 0,91 | 9,54E-02 | Intron            | HECTD2              |
| <b>chr12</b> | 63539369  | 63539419  | 51 | 0,91 | 9,85E-02 | Distal Intergenic | DPY19L2             |
| <b>chr1</b>  | 234964627 | 234964677 | 51 | 0,90 | 6,81E-02 | Intron            | LOC101927851        |
| <b>chr10</b> | 65226781  | 65226831  | 51 | 0,89 | 7,65E-02 | Distal Intergenic | LINC02671           |
| <b>chr3</b>  | 154343440 | 154343490 | 51 | 0,88 | 9,85E-02 | Intron            | GPR149              |
| <b>chr2</b>  | 95201133  | 95201183  | 51 | 0,81 | 4,77E-02 | Distal Intergenic | ZNF2                |

|              |           |           |    |       |          |                   |                        |
|--------------|-----------|-----------|----|-------|----------|-------------------|------------------------|
| <b>chr6</b>  | 34164970  | 34165020  | 51 | 0,81  | 7,36E-02 | Distal Intergenic | GRM4                   |
| <b>chr19</b> | 15532240  | 15532290  | 51 | 0,57  | 8,51E-02 | Intron            | CYP4F22                |
| <b>chr2</b>  | 113330678 | 113330728 | 51 | -0,69 | 8,33E-02 | Distal Intergenic | PAX8                   |
| <b>chr20</b> | 40591922  | 40591972  | 51 | -0,83 | 7,88E-02 | Distal Intergenic | MAFB                   |
| <b>chrX</b>  | 132206187 | 132206237 | 51 | -0,86 | 9,78E-02 | Intron            | RAP2C                  |
| <b>chr15</b> | 75783091  | 75783141  | 51 | -0,89 | 3,50E-02 | Exon              | MIR4313                |
| <b>chrX</b>  | 54415623  | 54415673  | 51 | -0,89 | 5,20E-02 | Distal Intergenic | TSR2                   |
| <b>chr12</b> | 448691    | 448741    | 51 | -0,89 | 9,32E-02 | Distal Intergenic | B4GALNT3               |
| <b>chr12</b> | 123891529 | 123891579 | 51 | -0,94 | 8,21E-02 | Intron            | ZNF664                 |
| <b>chr8</b>  | 104348301 | 104348351 | 51 | -0,95 | 6,51E-02 | Intron            | DPYS,DCSTAMP           |
| <b>chrX</b>  | 138975718 | 138975768 | 51 | -0,95 | 7,88E-02 | Intron            | FGF13                  |
| <b>chrX</b>  | 6922993   | 6923043   | 51 | -0,96 | 4,65E-02 | Distal Intergenic | MIR4767                |
| <b>chr12</b> | 69032768  | 69032818  | 51 | -0,96 | 9,21E-02 | Distal Intergenic | CPM                    |
| <b>chr1</b>  | 11524600  | 11524650  | 51 | -0,98 | 3,50E-02 | Intron            | DISP3                  |
| <b>chr3</b>  | 169667911 | 169667961 | 51 | -0,99 | 7,67E-02 | Distal Intergenic | MECOM                  |
| <b>chrX</b>  | 18076951  | 18077001  | 51 | -1,00 | 6,46E-02 | Intron            | LINC01456              |
| <b>chr15</b> | 34423114  | 34423164  | 51 | -1,00 | 7,67E-02 | Intron            | MIR1233-2,GOLGA8A      |
| <b>chrX</b>  | 22665163  | 22665213  | 51 | -1,02 | 8,91E-02 | Intron            | PTCHD1-AS              |
| <b>chrX</b>  | 118513003 | 118513053 | 51 | -1,02 | 9,32E-02 | Intron            | DOCK11                 |
| <b>chrX</b>  | 101136231 | 101136281 | 51 | -1,03 | 3,69E-02 | Intron            | CENPI                  |
| <b>chr22</b> | 35351526  | 35351576  | 51 | -1,04 | 4,25E-02 | Distal Intergenic | MIR6069,TOM1           |
| <b>chrX</b>  | 151081257 | 151081307 | 51 | -1,04 | 7,14E-02 | Distal Intergenic | MIR4330                |
| <b>chrX</b>  | 125801410 | 125801460 | 51 | -1,05 | 9,23E-02 | Distal Intergenic | LOC101928495           |
| <b>chr12</b> | 3368257   | 3368307   | 51 | -1,06 | 2,24E-02 | Promoter          | LINC02417,LOC100128253 |
| <b>chr8</b>  | 77712792  | 77712842  | 51 | -1,07 | 9,54E-02 | Distal Intergenic | LOC102724874           |
| <b>chrX</b>  | 11192104  | 11192154  | 51 | -1,08 | 6,03E-02 | Intron            | ARHGAP6                |
| <b>chr16</b> | 83659153  | 83659203  | 51 | -1,09 | 4,76E-02 | Intron            | CDH13                  |
| <b>chr6</b>  | 14299541  | 14299591  | 51 | -1,09 | 9,57E-02 | Distal Intergenic | LINC01108              |
| <b>chrX</b>  | 67106557  | 67106607  | 51 | -1,10 | 3,69E-02 | Distal Intergenic | AR                     |
| <b>chrX</b>  | 150808930 | 150808980 | 51 | -1,10 | 6,03E-02 | Intron            | CD99L2                 |
| <b>chr3</b>  | 26623928  | 26623978  | 51 | -1,11 | 7,14E-02 | Promoter          | LRRC3B                 |
| <b>chr18</b> | 76618747  | 76618797  | 51 | -1,12 | 2,33E-02 | Intron            | LINC00683,LINC01927    |
| <b>chr11</b> | 115563097 | 115563147 | 51 | -1,12 | 7,70E-02 | Distal Intergenic | CADM1                  |
| <b>chrX</b>  | 6945991   | 6946041   | 51 | -1,14 | 6,03E-02 | Distal Intergenic | MIR4767                |
| <b>chr6</b>  | 99095971  | 99096021  | 51 | -1,14 | 7,36E-02 | Distal Intergenic | MIR548AI               |
| <b>chrX</b>  | 55069834  | 55069884  | 51 | -1,15 | 7,14E-02 | Distal Intergenic | PAGE2B                 |
| <b>chr1</b>  | 37311910  | 37311960  | 51 | -1,17 | 7,88E-02 | Intron            | MIR4255                |
| <b>chr2</b>  | 140429152 | 140429202 | 51 | -1,18 | 8,21E-02 | Intron            | LRP1B                  |
| <b>chr5</b>  | 153673200 | 153673250 | 51 | -1,19 | 2,90E-02 | Intron            | GRIA1                  |
| <b>chrX</b>  | 152158838 | 152158888 | 51 | -1,20 | 1,60E-02 | Intron            | MAGEA10                |
| <b>chr5</b>  | 38060772  | 38060822  | 51 | -1,22 | 9,36E-02 | Intron            | LINC02107              |
| <b>chrX</b>  | 71541523  | 71541573  | 51 | -1,24 | 1,79E-02 | Intron            | OGT                    |
| <b>chr1</b>  | 109256111 | 109256161 | 51 | -1,24 | 2,36E-02 | Intron            | CELSR2                 |
| <b>chr4</b>  | 184113844 | 184113894 | 51 | -1,25 | 3,40E-02 | Intron            | ENPP6                  |
| <b>chr12</b> | 54945528  | 54945578  | 51 | -1,25 | 3,40E-02 | Distal Intergenic | TESPA1                 |

|       |           |           |    |       |          |                   |               |
|-------|-----------|-----------|----|-------|----------|-------------------|---------------|
| chrX  | 85929243  | 85929293  | 51 | -1,28 | 1,13E-02 | Intron            | CHM           |
| chrX  | 89762645  | 89762695  | 51 | -1,28 | 2,24E-02 | Distal Intergenic | TGIF2LX       |
| chrX  | 53882483  | 53882533  | 51 | -1,28 | 7,88E-02 | Distal Intergenic | PHF8          |
| chrX  | 124465657 | 124465707 | 51 | -1,29 | 3,18E-02 | Intron            | TENM1         |
| chrX  | 151248678 | 151248728 | 51 | -1,32 | 3,40E-02 | Distal Intergenic | GPR50-AS1     |
| chrX  | 16229890  | 16229940  | 51 | -1,33 | 6,66E-02 | Distal Intergenic | MAGEB17       |
| chr17 | 52837101  | 52837151  | 51 | -1,34 | 2,29E-02 | Distal Intergenic | MIR4315-2     |
| chr8  | 59459615  | 59459665  | 51 | -1,34 | 6,03E-02 | Distal Intergenic | TOX           |
| chrX  | 6733191   | 6733241   | 51 | -1,34 | 8,09E-02 | Distal Intergenic | VCX3A         |
| chr7  | 153925447 | 153925497 | 51 | -1,36 | 7,14E-02 | Intron            | DPP6          |
| chr7  | 71093710  | 71093760  | 51 | -1,37 | 1,13E-02 | Distal Intergenic | GALNT17       |
| chr7  | 68650369  | 68650419  | 51 | -1,40 | 4,10E-02 | Distal Intergenic | LOC102723427  |
| chr8  | 58402076  | 58402126  | 51 | -1,40 | 5,20E-02 | Distal Intergenic | UBXN2B        |
| chrX  | 15220693  | 15220743  | 51 | -1,40 | 6,51E-02 | Distal Intergenic | ASB9          |
| chr21 | 42258091  | 42258141  | 51 | -1,40 | 8,91E-02 | Intron            | ABCG1         |
| chr2  | 1706584   | 1706634   | 51 | -1,40 | 9,88E-02 | Intron            | PXDN          |
| chr11 | 105460895 | 105460945 | 51 | -1,41 | 8,40E-03 | Intron            | CARD18        |
| chr13 | 60803287  | 60803337  | 51 | -1,42 | 8,41E-02 | Distal Intergenic | LINC00378     |
| chr3  | 26242510  | 26242560  | 51 | -1,43 | 8,40E-03 | Distal Intergenic | LINC00692     |
| chr8  | 12484674  | 12484724  | 51 | -1,43 | 3,03E-02 | Intron            | LOC729732     |
| chr18 | 33067535  | 33067585  | 51 | -1,45 | 7,14E-02 | Intron            | CCDC178       |
| chrX  | 29379913  | 29379963  | 51 | -1,47 | 9,32E-02 | Intron            | IL1RAPL1      |
| chr4  | 60572869  | 60572919  | 51 | -1,51 | 7,65E-02 | Distal Intergenic | MIR548AG1     |
| chr4  | 135170099 | 135170149 | 51 | -1,52 | 8,51E-02 | Distal Intergenic | LINC02485     |
| chr22 | 42072946  | 42072996  | 51 | -1,53 | 2,48E-02 | Promoter          | PHETA2,NAGA   |
| chrX  | 42915747  | 42915797  | 51 | -1,54 | 8,74E-02 | Distal Intergenic | PPP1R2C       |
| chr8  | 101985976 | 101986026 | 51 | -1,56 | 1,79E-02 | Intron            | NCALD         |
| chr15 | 74702200  | 74702250  | 51 | -1,56 | 9,67E-02 | Distal Intergenic | EDC3          |
| chr22 | 40185897  | 40185947  | 51 | -1,62 | 1,60E-02 | Intron            | TNRC6B        |
| chr7  | 154662123 | 154662173 | 51 | -1,71 | 1,61E-02 | Intron            | DPP6          |
| chr8  | 128316307 | 128316357 | 51 | -1,71 | 4,69E-02 | Distal Intergenic | MIR1208       |
| chr20 | 47832617  | 47832667  | 51 | -1,73 | 3,15E-02 | Distal Intergenic | SULF2         |
| chr12 | 4758443   | 4758493   | 51 | -1,76 | 8,39E-03 | Intron            | GALNT8,NDUFA9 |
| chr1  | 161459262 | 161459312 | 51 | -1,84 | 1,13E-02 | Intron            | FCGR2A        |
| chr8  | 3323938   | 3323988   | 51 | -1,85 | 2,36E-02 | Intron            | CSMD1         |
| chr4  | 146113657 | 146113707 | 51 | -1,94 | 3,40E-02 | Exon              | LINC01095     |
| chr17 | 40892676  | 40892726  | 51 | -1,95 | 1,36E-02 | Distal Intergenic | KRT10         |
| chr16 | 54095151  | 54095201  | 51 | -2,00 | 7,88E-02 | Intron            | FTO           |
| chr10 | 45732942  | 45732992  | 51 | -2,05 | 1,60E-02 | Intron            | WASHC2C       |
| chr15 | 52254525  | 52254575  | 51 | -2,11 | 3,18E-02 | Intron            | MYO5C         |
| chr13 | 20119566  | 20119616  | 51 | -2,19 | 5,46E-03 | Distal Intergenic | LINC01072     |
| chr2  | 236254404 | 236254454 | 51 | -2,24 | 8,09E-02 | Intron            | ASB18         |
| chr1  | 25406267  | 25406317  | 51 | -2,31 | 3,22E-04 | Intron            | RHCE          |
| chr4  | 189836541 | 189836591 | 51 | -2,62 | 8,51E-02 | Intron            | DBET          |
| chr17 | 83232374  | 83232424  | 51 | -2,71 | 6,03E-02 | Intron            | RPL23AP87     |

|              |           |           |    |       |          |                   |         |
|--------------|-----------|-----------|----|-------|----------|-------------------|---------|
| <b>chr14</b> | 106757931 | 106757981 | 51 | -3,93 | 1,13E-02 | Distal Intergenic | MIR5195 |
|--------------|-----------|-----------|----|-------|----------|-------------------|---------|

**Supplementary Table S2.** Primers used in the RT-PCR analysis.

| Gene           | Primers  | Annealing temperature (°C) |
|----------------|--|----------------------------|
| <i>TET1</i>    | F: 5'AAATGTTGCCGAGAATGTC3'<br>R: 5'TGTTGTGAATGTCCTGTGG3'         | 56                         |
| <i>TET2</i>    | F: 5'GAAGGAATCCCGCTGTCTC3'<br>R: 5'ACAGGCCAAGTTCTCTCTT3'         | 56                         |
| <i>TET3</i>    | F: 5'CTGGAGCATGTACTTCAACG3'<br>R: 5'ACGGCAGTCAATCGCTATTTC3'      | 56                         |
| <i>CHM</i>     | F: 5'GAAATGATAATGCAGTCAAACAGG3'<br>R: 5'GTGGAGGGGGACAGAAATC3'    | 60                         |
| <i>MTPAP</i>   | F: 5'ACGATTCAGCTATAGCCCCT3'<br>R: 5'GCTAATTCTCAAATTTCTAAAGATGG3' | 60                         |
| <i>TMEM50A</i> | F: 5'AGACCAGCACGGTCAACTAGA3'<br>R: 5'TTCTGAAGAGGAAGAGACAACAAG3'  | 61                         |
| <i>RSRP1</i>   | F: 5'TTGACTTGCAGCTAGTCTCAG3'<br>R: 5'TTCTGTTACCTTTCCGACAGTT3'    | 60                         |
| <i>TBP</i>     | F: 5'ACTCCACTGTATCCCTCCC3'<br>R: 5'TATATTCGGCGTTCGGGCA3'         | 60                         |

F: forward. R: reverse.