| Primer Type          | Primer Sequence                                                                 |
|---------------------|--------------------------------------------------------------------------------|
| qRT-PCR primer      | oligonucleotides                                                               |
| mir-22-3p-RT        | GTCGTATACCGTCGGTGCAGTGGTGGAGTCGCTGGCAATTGCACTGGATA                             |
|                     | CGACACAGTTC                                                                  |
| mir-22-3p-F         | ATCCAGTGCTGCTGCTG                                                          |
| mir-22-3p-R         | TGCTAGGCTGCCGTTGGA                                                        |
| MeCP2-F             | GCCGAAGCTATGGAGACGGA                                                        |
| MeCP2-R             | CCAACCTCAGACAGGTTCC                                                       |
| MTHFD2-F            | GGCGATCGGAAATGAAGCTGTT                                                      |
| MTHFD2-R            | GCAACCAGGATACACTCA                                                          |
| MTHFR-F             | AGCTGGCGCTGAGAACCT                                                        |
| MTHFR-R             | ACTCGTGTAGGAGGCTGCTCC                                                      |
| P16-F               | CAACGCACCGAATAGGTTG                                                         |
| P16-R               | CAGCTCCTCAGCCCGGAGT                                                         |
| PTEN-F              | GGGTCTGAGTCGCGCTG                                                         |
| PTEN-R              | CGGTGTGGAGCAGTAGGGA                                                        |
| P21-F               | CACTCCAAGCGCCGCTGACTCCA                                                     |
| P21-R               | TGTAAGAGCCGCCTTGGAGGCCCTCC                                                  |
| RASSF1A-F           | GTTCACCTGCCACCTCCG                                                         |
| RASSF1A-R           | ACCGTCTTGTCAAGCTCA                                                         |
| BSP primer          | oligonucleotides                                                              |
| miR-22-enhancer-F   | GGGCCAGTGTTTCCACTGGA                                                        |
| miR-22-enhancer-R   | CCCCAAGACTCTCGTTGGA                                                       |
| P16-F               | TTTTTTTTTTTTTTTTTTTTTTTTTTTGG                                               |
| P16-R               | AAACCAATCCTCCTCCCTTACC                                                      |
| PTEN-F              | TTGTTATTTTTTTAGGGTTGGGA                                                    |
| PTEN-R              | CTAACCTACTCTCCTCAACAACC                                                    |
| RASSF1A-F           | TTGTTGATAGAAATTAAGGGGGTT                                                    |
| RASSF1A-R           | AACCAAAATAAAAAACCAAAATAACC                                                  |
| Enhancer clone primer | oligonucleotides                                                           |
| E1F                 | CCGATCCCTAGCCCTTGGCGTCCAGGTC                                               |
| E1R                 | GCGTCGACGCCGCCGGGGGAGTTATCATG                                               |
| E2F                 | CCGATCCCTAGCCCTTGGCGGCTCGACAGG                                             |
| E2R                 | GGCGATCGAGAGGAGGCTGACTCCA                                                  |
| OL-R                | GTGACGCCAGCCCTAGGGCGGCGGCGGAGGCAGGTTCC                                      |
| OL-F                | GGAATCCCTGGCGGCGGCTTGGGCGTCC                                                |
| ChIP primer         | oligonucleotides                                                              |
| ChIP-enhancer-F     | CACAGTGACATCTGGAGGC                                                         |
| ChIP-enhancer-R     | GAGGCCTGTTTTTTTGG                                                         |
| H3K27Ac/p300-chip-F | ATTCCTAAGGGGTCTCTAGTCC                                                     |
| H3K27Ac/p300-chip-R | TTTTCTAAGTGTCTTATGG                                                         |
| GAPDH-ChIP-F        | TACTAGCGGTTTACGGGG                                                          |
| GAPDH-ChIP-R        | TCGAACAGGAGGAGCAAGGA                                                      |
## Antibody information

| Antibody   | Cat No | company     |
|------------|--------|-------------|
| MeCP2      | ab2828 | Abcam       |
| MTHFD2     | ab151447 | Abcam    |
| MTHFR      | GTX100535 | GeneTex    |
| GFP        | ab290  | Abcam       |
| P16        | 80772  | Cell Signaling Technology |
| P21        | 2947   | Cell Signaling Technology |
| PTEN       | 9188   | Cell Signaling Technology |
| CDK4       | 12790  | Cell Signaling Technology |
| H3K27Ac    | ab4729 | Abcam       |
| RNA polymerase | ab817 | Abcam |