**SUPPLEMENTARY TABLES**

**Supplementary Table 1. Primer sequences used for qRT-PCR in this study.**

| Gene                        | Sequence                                      |
|-----------------------------|-----------------------------------------------|
| GPC5-AS1-F                  | 5'-AGAAGAGGGAAAAGGGAAGGTC-3'                  |
| GPC5-AS1-R                  | 5'-ACTACTGGGGAGGCTGAAGGT-3'                   |
| GPC5-F                      | 5'-TGTGATGATGAAGATGTTGC-3'                    |
| GPC5-R                      | 5'-GCCAGTGTCGTTGAGTTGGA-3'                    |
| GPC5-AS1 promoter region-F  | 5'-CGGACATTGCGGGGTATTA-3'                     |
| GPC5-AS1 promoter region-R  | 5'-TCGCAAGCGATTAGGTGT-3'                      |
| GAPDH-F                     | 5'-TGAAGGCTGGAGTCAACGGATT-3'                  |
| GAPDH-R                     | 5'-CCTGGAAAGATGTTGAGTTGGA-3'                  |
| hsa-miR-93-RT               | 5'-GTCGTATCCAGTGGCTCGTGGAGTGGCAATTTGCACTGGATACGACCTACCTG-3' |
| hsa-miR-93-F                | 5'-ATCCAGTGCGTGTGGTG-3'                       |
| hsa-miR-93-R                | 5'-TGCTAAAGATGTTAGGCGCT-3'                    |
| hsa-miR-106a-RT             | 5'-GTCGTATCCAGTGGCTCGTGGAGTGGCAATTTGCACTGGATACGACCTACCTG-3' |
| hsa-miR-106a-F              | 5'-ATCCAGTGCGTGTGGTG-3'                       |
| hsa-miR-106a-R              | 5'-TGCTAAAGATGTTAGGCGCT-3'                    |
| U6-RT                       | 5'-CGCTTACGAAATTGCGGTGTCAT-3'                 |
| U6-F                        | 5'-GCTTCGGGACACATATACTAAAAT-3'                |
| U6-R                        | 5'-CGCTTACGAAATTGCGGTGTCAT-3'                 |

**Supplementary Table 2. Information on antibodies used for the correlation analysis.**

| Antibody                  | WB     | Specificity     | Company                           |
|---------------------------|--------|----------------|-----------------------------------|
| MeCP2 (sc-20700)          | 1:1000 | Rabbit polyclonal | Santa Cruz Biotechnology          |
| GPC5 (ab123886)           | 1:1000 | Rabbit Monoclonal | Abcam                            |
| GAPDH (sc-8432)           | 1:1000 | Mouse Monoclonal | Cell Signaling Technology        |
| MeCP2 ChIP Grade (ab2828) | -      | Rabbit polyclonal | Abcam                            |
| GFP ChIP Grade (ab290)    | -      | Rabbit polyclonal | Abcam                            |
| IgG ChIP Grade (ab171870) | -      | Rabbit polyclonal | Abcam                            |

**Supplementary Table 3. Sequences of siRNA or shRNA.**

| Name                        | Sequence                                      |
|-----------------------------|-----------------------------------------------|
| negative siRNA (NC-siRNA)   | 5′-UUCUCCGAACGUACGUCACGUTT-3′                  |
| negative siRNA (NC-siRNA)   | 5′-ACGUGACACGUUCCGAGAATT-3′                    |
| si-MeCP2 sense              | 5′-GCUAAGCAAAAGGAAAUCUTT-3′                    |
| si-MeCP2 antisense          | 5′-AGAUAUUUGUUCGUAAGAGGTT-3′                   |
| sh-Control target sequence  | 5′-TTCTCCGAAGCCTGTCAGT-3′                      |
| sh-GPC5-AS1 target sequence | 5′-GCAATCCTCAATAATATCTGG-3′                    |
| sh-GPC5 target sequence     | 5′-GCAAGGAACATACGACATGG-3′                     |
### Supplementary Table 4. Sequences of MECP2 MT recombinant plasmids.

| Name            | Sequence                                                                 |
|-----------------|--------------------------------------------------------------------------|
| MECP2-WT MBD    | 5'-'AGGGGCCCTATGTATGATGACCCCTACACTGCCCGAGGGCTGGACCAGGAAACTGAA            |
|                 | GCAGAGGAAGTCCCGGAGGAGGCTGGACCAGGAAACTGAA                                |
|                 | GGGCAAGGCTTATAGATCAAAGGTGAGCTGAGTCGCTACTTTGACATGTCAGGCGAC              |
|                 | ACATCCCTAGACCCGAATGACTTTGACACTCTACAGTGAGCAAGGAAGGCTGGACCAGGAAACTGAA    |
| MECP2-MT1 MBD   | 5'-'AGGGGCCCTATGTATGATGACCCCTACACTGCCCGAGGGCTGGACCAGGAAACTGAA           |
|                 | GCAGAGGAAGTCCCGGAGGAGGCTGGACCAGGAAACTGAA                                |
|                 | GGGCAAGGCTTATAGATCAAAGGTGAGCTGAGTCGCTACTTTGACATGTCAGGCGAC              |
|                 | ACATCCCTAGACCCGAATGACTTTGACACTCTACAGTGAGCAAGGAAGGCTGGACCAGGAAACTGAA    |
| MECP2-MT2 MBD   | 5'-'AGGGGCCCTATGTATGATGACCCCTACACTGCCCGAGGGCTGGACCAGGAAACTGAA           |
|                 | GCAGAGGAAGTCCCGGAGGAGGCTGGACCAGGAAACTGAA                                |
|                 | GGGCAAGGCTTATAGATCAAAGGTGAGCTGAGTCGCTACTTTGACATGTCAGGCGAC              |
|                 | ACATCCCTAGACCCGAATGACTTTGACACTCTACAGTGAGCAAGGAAGGCTGGACCAGGAAACTGAA    |

### Supplementary Table 5. Sequences of MeCP2 binding to GPC5-AS1 promoter region.

| Gene    | Sequence                                                                 |
|---------|--------------------------------------------------------------------------|
| GPC5-AS1| ATCTATTTATTTGTCTTTTTAAGTGGGAATCCTCTCTCCACTCTCAATTTATTTTTAATGTA            |
|         | GTGGTTTTCTACCTGAAACCGGACATTGCGGTATATGGAAGGACTCC                        |
|         | AGATATTATTTACCCCTCCCTTGATCTGATTTTTCCACAGACTCCATATTAGC                  |
|         | AGGCTATGGAGAGCAACCACCTAATGCCCTGAGGATGTTGAAATAGCTG                       |