**Table S1. The correlation between the mutation rate of methylated and unmethylated CpG sites for all sites in all stages**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cell Stage** | **Chi-square test of mutation rate on met-CpG and unmet-CpG** | | **Pearson's correlation of methylation-mutation on 5 methylated levels** | |
|  | **P-value** | | **P-value** | **Rho** |
| sperm | < 2.2e-16 \*\*\* | 0.0022 \*\*\* | | 0.985 |
| oocyte | < 2.2e-16 \*\*\* | 0.0357 \*\* | | 0.903 |
| 8-cell | < 2.2e-16 \*\*\* | 0.0913 \* | | 0.817 |
| morula | < 2.2e-16 \*\*\* | 0.0002 \*\*\* | | 0.997 |
| ICM | < 2.2e-16 \*\*\* | 0.0005 \*\*\* | | 0.994 |
| PGC7wm | < 2.2e-16 \*\*\* | 0.0160 \*\* | | 0.943 |
| PGC10wm | < 2.2e-16 \*\*\* | 0.0048 \*\*\* | | 0.975 |
| PGC10wf | < 2.2e-16 \*\*\* | 0.0234 \*\* | | 0.941 |
| PGC11wm | < 2.2e-16 \*\*\* | 3.637e-05 \*\*\* | | 0.941 |
| PGC11wf | < 2.2e-16 \*\*\* | 0.0009 \*\*\* | | 0.992 |
| PGC13wm | < 2.2e-16 \*\*\* | 0.0002 \*\*\* | | 0.997 |
| PGC17wf | < 2.2e-16 \*\*\* | 0.0025 \*\*\* | | 0.984 |
| PGC19wm | < 2.2e-16 \*\*\* | 0.0004 \*\*\* | | 0.998 |

\*p<0.1

\*\*p<0.05

\*\*\*p<0.01

**Table S2. The correlation between the mutation rate of methylated and unmethylated CpG sites for common sites in all stages**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cell Stage** | **Chi-square test of mutation rate on met-CpG and unmet-CpG** | **Pearson's correlation of methylation-mutation on 5 methylated levels** | |
|  | **P-value** | **P-value** | **Rho** |
| sperm | < 2.2e-16 \*\*\* | 0.0014 \*\*\* | 0.989 |
| oocyte | < 2.2e-16 \*\*\* | 0.0869 \* | 0.823 |
| 8-cell | < 2.2e-16 \*\*\* | 0.0945 \* | 0.813 |
| morula | < 2.2e-16 \*\*\* | 0.0378 \*\* | 0.899 |
| ICM | < 2.2e-16 \*\*\* | 0.0243 \*\* | 0.925 |
| PGC7wm | < 2.2e-16 \*\*\* | 0.0035 \*\*\* | 0.979 |
| PGC10wm | < 2.2e-16 \*\*\* | 0.0011 \*\*\* | 0.990 |
| PGC10wf | < 2.2e-16 \*\*\* | 0.0284 \*\* | 0.917 |
| PGC11wm | < 2.2e-16 \*\*\* | 0.0012 \*\*\* | 0.990 |
| PGC11wf | < 2.2e-16 \*\*\* | 0.0002 \*\*\* | 0.997 |
| PGC13wm | < 2.2e-16 \*\*\* | 0.0006 \*\*\* | 0.993 |
| PGC17wf | < 2.2e-16 \*\*\* | 0.0003 \*\*\* | 0.996 |
| PGC19wm | < 2.2e-16 \*\*\* | 0.0028 \*\*\* | 0.982 |

\*p<0.1

\*\*p<0.05

\*\*\*p<0.01