**Supplemental Table 1. Distribution of DML in brain and blood between PD cases with 0 years of Plantation Work (n=13) and PD cases with 10+ years of Plantation Work (n=4)**

|  |  |  |
| --- | --- | --- |
| **Description of Feature** | **Brain** | **Blood** |
| Differentially Methylated Loci Beta Values p<0.001 (p<0.0001) | 94 (7) | 788 (123) |
| Increased Methylation | 69 (6) | 495 (87) |
|  Autosomal | 70 (6) | 485 (85) |
|  Annotated Genes | 46 (5) | 604 (93) |
| Decreased Methylation | 25 (1) | 296 (36) |
|  Autosomal | 25 (1) | 283 (34) |
|  Annotated Genes | 20 (1) | 187 (19) |

**Supplemental Table 2. DML with p<0.001 and the number of associated annotated genes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comparison | DML | Annotated Genes |  | Genes Analyzable in IPA® |
| Brain; Plantation Work 10+ years vs 0 | 94 | 66 |  | **58** |
| Blood; Plantation Work 10+ years vs 0 | 123\* | 112 |  | **81** |
| Brain; 4+ OGCs vs 0-2 OGGs | 69 | 60 |  | **53** |
| Blood; 4+ OGCs vs 0-2 OGGs | 176 | 136 |  | **129** |
| \*p<0.0001 |  |  |  |  |  |  |

**Supplemental Table 3. Distribution of DML in brain and blood between PD cases with 4+ OGCs (n=4) and PD cases with 0-2 OGCs (n=12)** **detected in brain tissue**

|  |  |  |
| --- | --- | --- |
| Description of Feature | Brain | Blood |
| Differentially Methylated Loci p<0.001 (p<0.0001) | 69 (8) | 176 (18) |
| Increased Methylation | 49 (6) | 106 (11) |
|  Autosomal | 48 (6) | 101 (10) |
|  Annotated Genes | 46 (4) | 84 (10) |
| Decreased Methylation | 20 (2) | 70 (7) |
|  Autosomal | 18 (2) | 67 (7) |
|  Annotated Genes | 14 (1) | 52 (6) |

**Supplemental Table 4. Meth450K BeadChip Analysis and Pyrosequencing correlation**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CpG locus | Gene | Tissue | Correlation\* | p-value$ | n |
| cg00740510 | MPPED1 | Brain | 0.9 | <0.0001 | 26 |
| cg00740510 | MPPED1 | Blood | 0.86 | <0.0001 | 18 |
| cg09677945 | DNAJC15 | Brain | 0.57 | 0.002 | 27 |
| cg09677945 | DNAJC15 | Blood | -0.06 | 0.81 | 18 |
| cg12923728 | SDHAP1 | Brain | 0.58 | 0.002 | 28 |
| cg12923728 | SDHAP1 | Blood | 0.36 | 0.38 | 8 |
| cg24818524 | FRMPD4 | Brain | 0.9 | <0.0001 | 28 |
| cg24818524 | FRMPD4 | Blood | 0.97 | <0.0001 | 19 |
| cg05608383 | TMCO3 | Brain | 0.78 | <0.0001 | 19 |
| cg05608383 | TMCO3 |  Blood | 0.46 | 0.05 | 19 |
| cg06065608 | PARK2 | Brain | 0.85 | <0.0001 | 28 |
| cg06065608 | PARK2 | Blood | 0.8 | 0.0004 | 15 |
| cg00044245 | EPHA7 | Brain | -0.08 | 0.67 | 28 |
| cg25608490 | WNT16 | Blood | 0.95 | <0.0001 | 19 |
| cg21699894 | KLRD1-TOX2 | Blood | 0.94 | <0.0001 | 19 |
| \*Pearson correlation cofactor R;  $ Two-tailed p-value; n number of samples tested |