**Supplemental Material**

**Supplemental Table I. Correlations of Alu methylation in blood in adjacent CpG sites**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Birth (n=246) | | | |  | Age 9 (n=246) | | | |
|  | Position 1 | Position 2 | Position 3 | Position 4 |  | Position 1 | Position 2 | Position 3 | Position 4 |
| Position 1 | 1 |  |  |  |  | 1 |  |  |  |
| p |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Position 2 | 0.5944 | 1 |  |  |  | 0.6061 | 1 |  |  |
| p | <0.0005 |  |  |  |  | <0.0005 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Position 3 | 0.4521 | 0.296 | 1 |  |  | 0.5549 | 0.3765 | 1 |  |
| p | <0.0005 | <0.0005 |  |  |  | <0.0005 | <0.0005 |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Position 4 | 0.665 | 0.6472 | 0.5465 | 1 |  | 0.6741 | 0.6059 | 0.5387 | 1 |
| p | <0.0005 | <0.0005 | <0.0005 |  |  | <0.0005 | <0.0005 | <0.0005 |  |

**Supplemental Table II. Correlations of LINE-1 methylation in blood in adjacent CpG sites**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Birth (n=246) | | | |  | Age 9 (n=246) | | | |
|  | Position 1 | Position 2 | Position 3 | Position 4 |  | Position 1 | Position 2 | Position 3 | Position 4 |
| Position 1 | 1 |  |  |  |  | 1 |  |  |  |
| p |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Position 2 | 0.3535 | 1 |  |  |  | 0.4626 | 1 |  |  |
| p | <0.0005 |  |  |  |  | <0.0005 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Position 3 | 0.1614 | 0.5467 | 1 |  |  | 0.2224 | 0.5248 | 1 |  |
| p | 0.0112 | <0.0005 |  |  |  | 0.0004 | <0.0005 |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Position 4 | 0.5126 | 0.6941 | 0.313 | 1 |  | 0.6048 | 0.7406 | 0.3347 | 1 |
| p | <0.0005 | <0.0005 | <0.0005 |  |  | <0.0005 | <0.0005 | <0.0005 |  |

**Supplemental Table III. Associations of differential cell count with Alu and LINE-1 methylation at birth (cord blood, n=103)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Alu | | LINE-1 | |
|  | β(95%CI) | p-value | β(95%CI) | p-value |
| Neutrophils | — |  | — |  |
| Lymphocytes | 2.5(-1.4,6.3) | 0.21 | -2.5(-9.5,4.6) | 0.49 |
| Monocytes | 6.9(-0.9,14.7) | 0.08 | -3.4(-17.5,10.7) | 0.64 |
| Eosinophils | -2.9(-15.1,9.2) | 0.64 | 14.9(-7.4,37.1) | 0.19 |
| Basophils | -15.3(-48.5,18) | 0.37 | -50.2(-110.7,10.3) | 0.10 |

*a*Results are generated from a mixed effects regression model including percent lymphocytes, monocytes, eosinophils, and basophils as covariates and using percent neutrophils as the baseline. Each row represents the difference (%5 mC) in Alu or LINE-1 methylation in that cell type compared to the baseline (neutrophils).

**Supplemental Table IV.** Differences in Alu and LINE-1 blood methylation in 9 year olds associated with a 10-fold increase in prenatal DDT, DDE, and PBDE exposure.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Alu** | | **LINE-1** | |
|  | **β(95%CI)** | **p-value** | **β(95%CI)** | **p-value** |
| **DDT/E** |  |  |  |  |
| log o,p'-DDT | -0.10(-0.25,0.06) | 0.22 | -0.08(-0.38,0.21) | 0.59 |
| log p,p'-DDT | -0.09(-0.22,0.04) | 0.16 | -0.03(-0.27,0.21) | 0.80 |
| log p,p'-DDE | -0.08(-0.25,0.09) | 0.34 | 0.10(-0.22,0.42) | 0.56 |
| **PBDEs** |  |  |  |  |
| Log BDE SUM | -0.10(-0.34,0.15) | 0.44 | 0.20(-0.34,0.74) | 0.47 |
| Log BDE-153 | -0.17(-0.44,0.09) | 0.20 | 0.03(-0.55,0.61) | 0.92 |
| Log BDE-100 | -0.14(-0.38,0.11) | 0.27 | 0.17(-0.37,0.71) | 0.53 |
| Log BDE-99 | -0.00(-0.23,0.23) | 1.00 | 0.20(-0.30,0.70) | 0.43 |
| Log BDE-47 | -0.09(-0.32,0.15) | 0.46 | 0.21(-0.30,0.73) | 0.41 |

DDT - dichlorodiphenyl trichloroethane

DDE – dichlorodiphenyldichloroethylene

PBDEs - polybrominated diphenyl ether

BDE - polybrominated diphenyl ether

*a*Each row represents one mixed effects regression model examining the association of log10 OC or log10 PBDE exposure with Alu or LINE-1 methylation controlling for sex.

b The magnitude of the beta coefficients labeled as 0.00 were lower than 0.005.