**Table S1 Demographic characteristics of women in and out of early pregnancy**

| Variables | | Included group(n=318) | Total group(n=393) | *P* |
|---|---|---|---|---|
| age | | 26.22±4.7 | 26.38±4.7 | 0.66 |
| Pre-pregnancy BMI (kg/m2) | | 22.10±4.22 | 22.06±4.24 | 0.894 |
| Level of education | High school degree or below | 232 (72.95%) | 276 (70.2%) | 0.423 |
| | College degree or above | 86 (27.04%) | 117 (29.8%) | |
| Ethnic | Minority | 6 (1.8%) | 9 (2.3%) | 0.71 |
| | Ethnic Han | 312 (98.11%) | 384 (97.7%) | |
| Marital status | Married | 277 (87.11%) | 346 (88.0%) | 0.923 |
| | Spinsterhood | 39 (12.26%) | 45 (11.5%) | |
| | Divorced | 2 (0.62%) | 2 (0.5%) | |
| Smoking | | 20 (6.28%) | 29 (7.4%) | 0.568 |
| Drink | | 27 (8.49%) | 35 (8.9%) | 0.845 |
| Passive smoking | | 313 (98.43%) | 385 (98.0%) | 0.647 |
| Activities | Little or no | 167 (52.52%) | 223 (56.7%) | 0.468 |
| | 1-2/week | 41 (12.89%) | 42 (10.7%) | |
| | ≥3/week | 110 (34.59%) | 128 (32.6%) | |
| WBC | | 8.09 (6.80, 9.58) | 8.31 (6.90, 9.56) | 0.805 |
| lymphocyte | | 1.80 (1.50, 2.18) | 1.88 (1.50, 2.20) | 0.869 |
| neutrophile granulocyte | | 5.73 (4.60, 6.94) | 5.86 (4.67, 6.96) | 0.769 |
| monocyte | | 0.40 (0.32, 0.48) | 0.42 (0.33, 0.48) | 0.307 |
| platelet | | 241.5 (202, 274) | 244.4 (204.5, 274) | 0.769 |
| NLR | | 3.11 (2.43, 3.94) | 3.31 (2.44, 3.93) | 0.681 |
| PLR | | 130.50 (109.44, 155.56) | 136.9 (109.72, 155.44) | 0.979 |
| SII | | 727.00 (552.05, 942.74) | 813.95 (554.65, 952.35) | 0.882 |

**Table S2. Retention time, ion pair, collision energy, determination coefficient, recovery rate, and detection limit of each metabolite.**

| Chemical | RT (min) | Precursor Ion | Product Ion | CE (eV) | ISTD | Determination coefficient ($R^2$) | LOD (μg /L) | Recovery (%) | RSD (%) |
|---|---|---|---|---|---|---|---|---|---|
| 1-OHNap-D7 | 15.987 | 223 | 208 | 15 | N/A | N/A | N/A | N/A | N/A |
| 1-OHNap | 16.043 | 216 | 201 | 15 | 1-OHNap-D7 | 0.9998 | 0.005 | 107.05 | 1.4 |
| 2-OHNap | 16.547 | 216 | 201 | 15 | 1-OHNap-D7 | 0.9999 | 0.0027 | 105.71 | 2.27 |
| 9-OHFlu | 20.231 | 254 | 165 | 20 | 1-OHNap-D7 | 0.9998 | 0.0023 | 94.15 | 2.85 |
| 2-OHFlu | 22.471 | 254 | 239 | 15 | 1-OHNap-D7 | 0.9998 | 0.0029 | 91.99 | 3.18 |
| 4-OHPhe | 25.209 | 266 | 235 | 25 | 1-OHNap-D7 | 0.9999 | 0.0167 | 90.08 | 5.01 |
| 9-OHPhe | 25.211 | 266 | 73 | 25 | 1-OHNap-D7 | 0.9982 | 0.0044 | 105.01 | 4.99 |
| 1-OHPhe | 25.685 | 266 | 73 | 25 | 1-OHNap-D7 | 0.9998 | 0.0071 | 81.09 | 4.96 |
| 3-OHPhe | 25.854 | 266 | 73 | 25 | 1-OHNap-D7 | 0.9999 | 0.0095 | 84.5 | 5.48 |
| 2-OHPhe | 26.702 | 266 | 73 | 25 | 1-OHNap-D7 | 0.9999 | 0.0115 | 68.19 | 2.41 |
| 1-OHPyr | 30.857 | 290 | 73 | 25 | 1-OHPyr-D9 | 0.9999 | 0.0003 | 100.3 | 1.97 |
| 1-OHPyr-D9 | 31.229 | 299 | 73 | 25 | N/A | N/A | N/A | N/A | N/A |
| MMP | 16.731 | 237 | 89 | 15 | MEHP-C4 | 0.9986 | 0.0375 | 80.45 | 8.37 |
| MEP | 17.837 | 251 | 75 | 15 | MEHP-C4 | 0.9972 | 0.0288 | 102.31 | 6.15 |
| MIBP | 17.84 | 223 | 75 | 15 | MEHP-C4 | 0.9988 | 0.0023 | 99.71 | 4.95 |
| MBP | 19.785 | 223 | 75 | 15 | MEHP-C4 | 0.9982 | 0.0015 | 92.64 | 4.77 |
| MOP | 20.426 | 223 | 73 | 15 | MEHP-C4 | 0.9997 | 0.0625 | 100 | 3.15 |
| MEHP | 21.669 | 221 | 73 | 15 | MEHP-C4 | 0.9999 | 0.0326 | 112.59 | 3.59 |
| MEOHP | 24.633 | 221 | 73 | 15 | MEHHP-C4 | 0.9986 | 1.0714 | 105.16 | 4.14 |
| MEHP-C4 | 27.619 | 225 | 73 | 15 | N/A | N/A | N/A | N/A | N/A |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| MEHHP-C4 | 28.154 | 225 | 73 | 15 | N/A | N/A | N/A | N/A | N/A |
| MEHHP | 29.367 | 221 | 73 | 15 | MEHHP-C4 | 0.9998 | 0.0103 | 104.21 | 3.67 |
| MECPP | 31.667 | 221 | 73 | 15 | MEHHP-C4 | 0.9847 | 23.4375 | 134.28 | 54.4 |

Abbreviations: RT, retention time; CE, collision energy; ISTD, internal standard substance; LOD, limit of detection; RSD, relative standard deviation; N/A, not

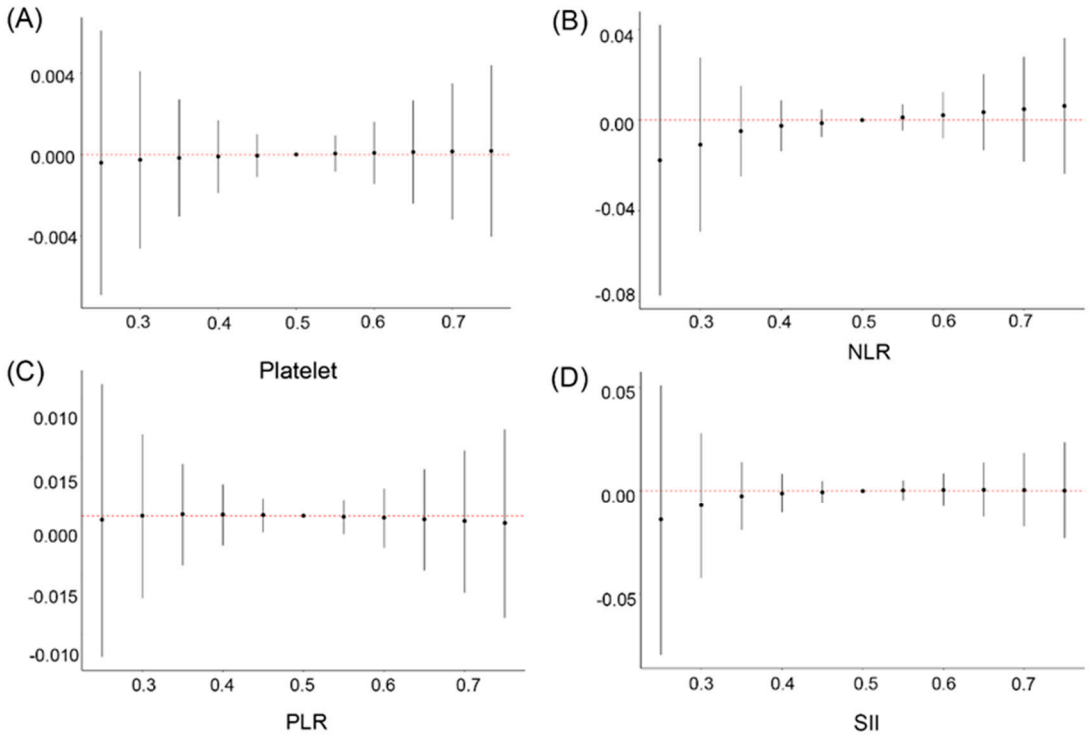


**Fig S1.** The overall association of screened OH-PAHs and PAEs mixtures with Platelet (A), NLR (B), PLR (C), and SII (D) was estimated by Bayesian kernel machine regression (BKMR). The model adjusted for maternal age, pre-pregnancy BMI, marital status, categorical education, race, smoking, passive smoking, exercise, and alcohol consumption

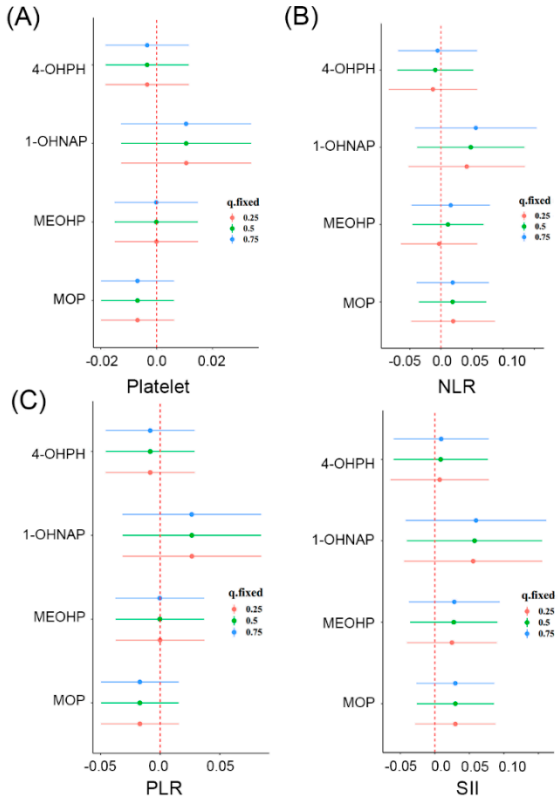


**Fig S2.** The single associations of screened OH-PAHs and PAEs with Platelet (A), NLR (B), PLR (C), and SII (D) were estimated by the

Bayesian kernel machine regression (BKMR) model. The model adjusted for maternal age, pre-pregnancy BMI, marital status, categorical education, race, smoking, passive smoking, exercise, and alcohol consumption.

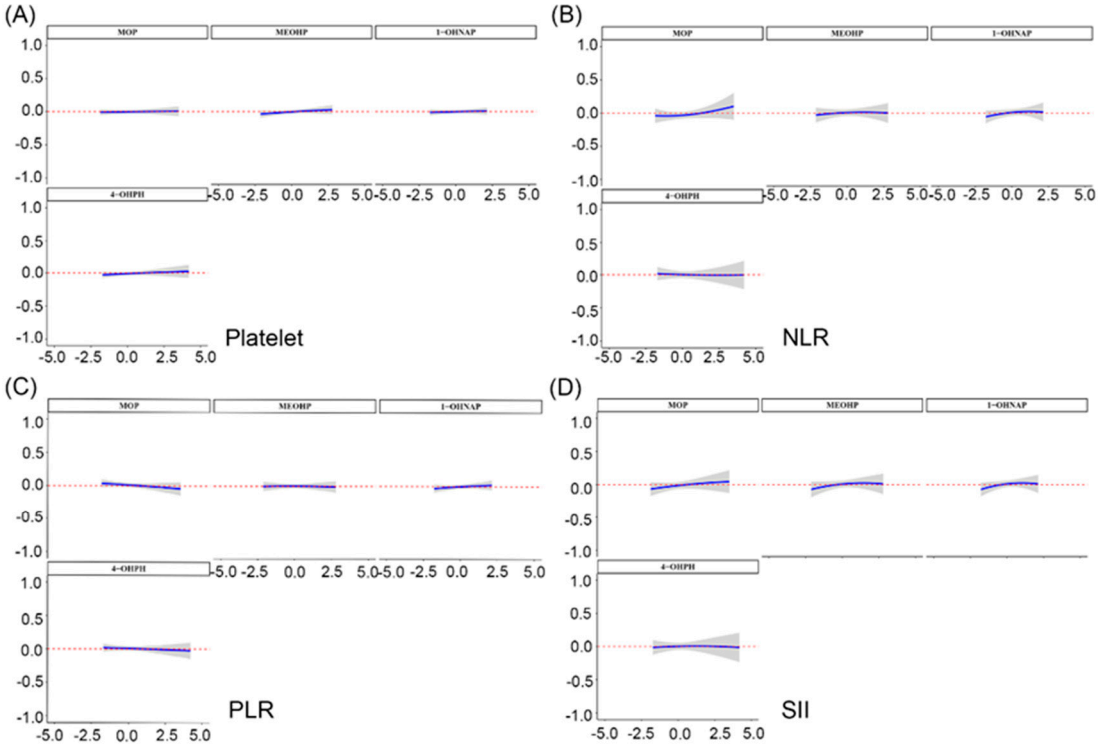


**Fig S3.** Univariate exposure-response relationships between the concentration of each substance and platelet (A), NLR (B), PLR (C), and SII (D) when the other substances were fixed at median concentrations. The model adjusted for maternal age, pre-pregnancy BMI, marital status, categorical education, race, smoking, passive smoking, exercise, and alcohol consumption.

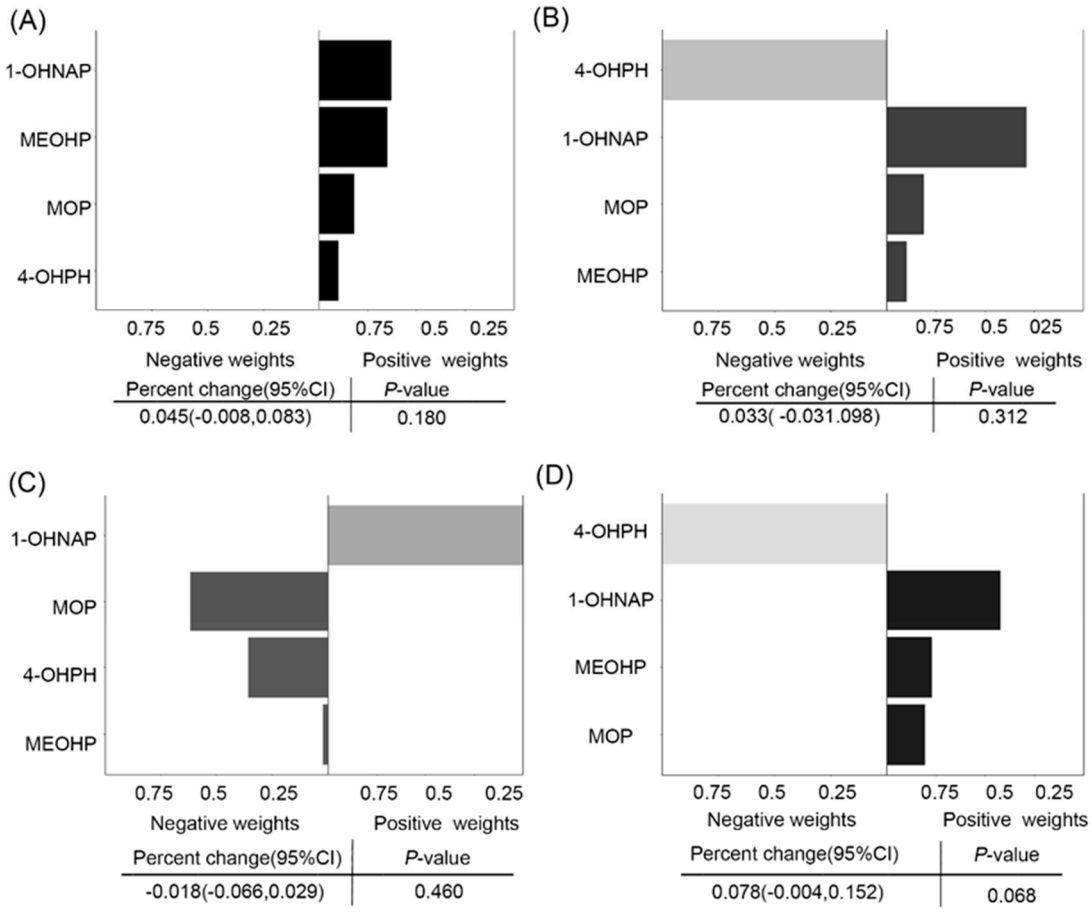


Fig S4 Estimation of the combined association of screening the four mixtures of OH-PAHs and PAE DNA s in blood platelet (A), NLR (B), PLR (C), and SII (D) and scaled weights corresponding to the proportion of the joint association for each chemical in Quantile g-computation.

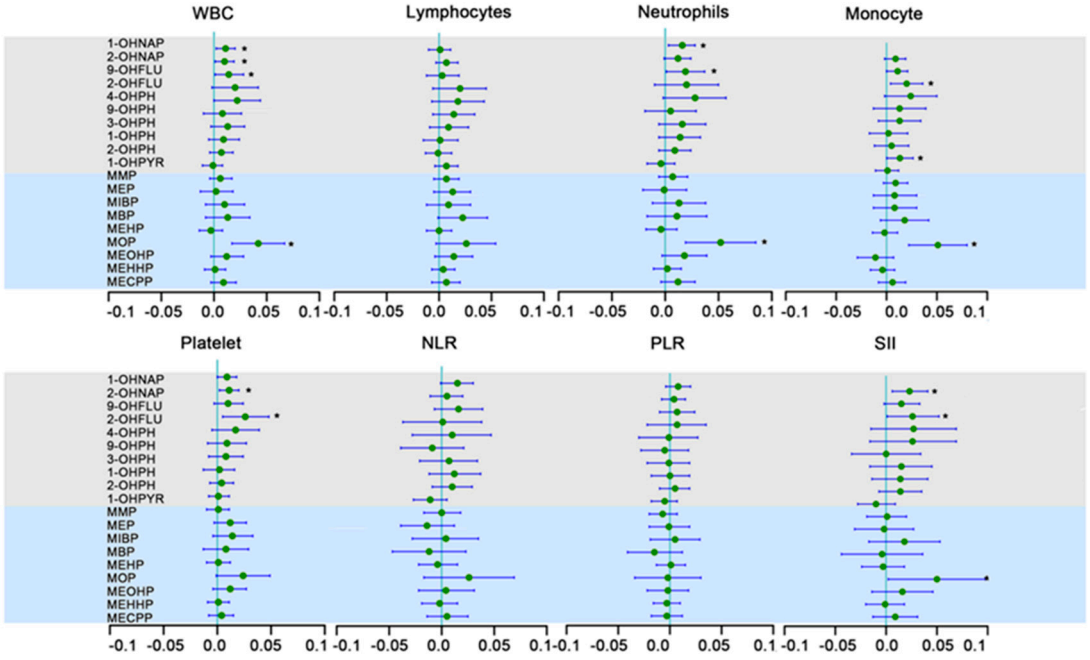


**Fig S5.** When we excluded the pregnant women with WBC < 4.0 × 109/L or > < 12.0 × 109/L,

the association of OH-PAHs or PAEs with blood cell-based biomarkers of inflammation in the urine of pregnant women. Linear regression models adjusted for maternal age, pre-pregnancy BMI, marital status, categorical education, race, smoking, passive smoking, exercise, and alcohol consumption.