**Supplementary Data**: (1 table, 1 figure)

**Supplementary Table 1.** Concentrations (ng/mL) of urinary phthalate metabolic about pregnant in different month.

**Supplementary Figure 1.** Heat map of spearman correlation between different urinary phthalate metabolite

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| **Supplementary Table 1.** Concentrations (ng/mL) of urinary phthalate metabolic about pregnant in different month.  |
|  |  | **MMP** | **MEP** | **MiBP** | **MnBP** | **MBzP** | **MoP** | **MEHP** | **MECPP** | **MEHHP** | **MEOHP** | **ΣmLPAE** | **ΣmDEHP** | **Σ10mPAE** |
| **Baseline** | range a | 5.38−74.8 | 14.5−77.4 | 4.66−50.5 | 28.3−140 | 0.78−7.16 | nd b−3.53 | 2.36−20.6 | 3.28−36.4 | 12.5−166 | 17.1−161 | 108−279 | 92.5−319 | 257−527 |
| **n = 35** | median | 32.78 | 42.8 | 21.8 | 75.0 | 3.24 | 1.48 | 9.73 | 16.5 | 83.5 | 72.6 | 179 | 186 | 374 |
|  | mean | 37.3 | 43.6 | 25.1 | 82.1 | 3.76 | 1.75 | 10.8 | 18.4 | 85.1 | 82.0 | 181 | 184 | 371 |
|  | sd | 30.5 | 27.6 | 20.4 | 49.8 | 3.00 | 1.47 | 7.79 | 13.9 | 65.4 | 62.5 | 58.9 | 72.7 | 112 |
|  | ***range c*** | ***4.82−******75.1*** | ***14.3−******72.3*** | ***4.42−******51.4*** | ***31.0−******141*** | ***0.68−******6.68*** | ***nd−******3.84*** | ***2.12−******18.7*** | ***3.29−******35.4*** | ***12.2−******168*** | ***16.2−******167*** | ***112−******273*** | ***97−******304*** | ***264−******515*** |
|  | ***median*** | ***31.9*** | ***41.9*** | ***19.2*** | ***75.5*** | ***1.47*** | ***1.16*** | ***3.62*** | ***16.3*** | ***84.9*** | ***78.8*** | ***187*** | ***193*** | ***393*** |
|  | ***mean*** | ***36.3*** | ***41.8*** | ***24.8*** | ***83.5*** | ***2.41*** | ***1.00*** | ***5.78*** | ***17.9*** | ***88.0*** | ***85.0*** | ***189*** | ***196*** | ***386*** |
|  | ***sd*** | ***27.2*** | ***22.7*** | ***18.8*** | ***43.1*** | ***2.71*** | ***1.69*** | ***6.96*** | ***12.0*** | ***57.8*** | ***57.4*** | ***58.6*** | ***80.3*** | ***100*** |
| **3rd month** | range a | 4.85−65.3 | 11.0−75.9 | 4.25−47.5 | 10.1−101 | 0.70−6.23 | nd−3.41 | 3.75−18.0 | 2.75−28.1 | 9.87−134 | 9.48−144 | 89.2−202 | 82.7−241 | 211−398 |
| **n =29** | median | 31.1 | 38.1 | 19.7 | 51.0 | 3.63 | nd | 10.8 | 14.3 | 55.0 | 60.2 | 142 | 149 | 331 |
|  | mean | 34.6 | 39.9 | 22.8 | 56.0 | 3.61 | 1.82 | 10.9 | 15.4 | 62.8 | 67.6 | 149 | 148 | 301 |
|  | sd | 28.3 | 28.3 | 18.1 | 39.9 | 2.50 | 1.39 | 6.5 | 11.9 | 52.5 | 56.9 | 52.5 | 71.2 | 97.9 |
|  | ***range c*** | ***5.52−******65.0*** | ***10.7−******70.3*** | ***4.26−******45.7*** | ***12.1−******112*** | ***0.63−******6.62*** | ***nd−******2.98*** | ***3.27−******17.9*** | ***2.15−******28.7*** | ***10.3−******137*** | ***8.70−******149*** | ***98.3−******221*** | ***87.4−******253*** | ***222−******412*** |
|  | ***median*** | ***30.5*** | ***38.1*** | ***18.3*** | ***52.2*** | ***2.24*** | ***nd*** | ***9.61*** | ***14.9*** | ***51.0*** | ***60.7*** | ***149*** | ***144*** | ***310*** |
|  | ***mean*** | ***34.1*** | ***38.7*** | ***21.6*** | ***57.4*** | ***2.72*** | ***1.34*** | ***9.25*** | ***15.7*** | ***64.5*** | ***68.5*** | ***155*** | ***157*** | ***312*** |
|  | ***sd*** | ***24.3*** | ***23.7*** | ***15.5*** | ***33.9*** | ***2.58*** | ***1.20*** | ***7.08*** | ***10.9*** | ***46.2*** | ***53.0*** | ***49*** | ***66.0*** | ***81.5*** |
| **4th month** | range a | 3.24−66.6 | 10.3−62.2 | 4.22−41.7 | 17.5−103 | nd−6.01 | nd−2.84 | 1.74−20.1 | 2.98−25.5 | 11.3−101 | 15.2−127 | 86.4−210 | 66.2−218 | 179−379 |
| **n = 27** | median | 24.6 | 27.7 | 17.2 | 63.4 | 3.27 | nd | 10.1 | 13.4 | 52.3 | 65.1 | 139 | 139 | 277 |
|  | mean | 31.6 | 32.9 | 20.1 | 62.3 | 3.32 | 1.83 | 10.5 | 13.6 | 55.2 | 68.8 | 141 | 147 | 286 |
|  | sd | 27.4 | 22.8 | 16.9 | 38.1 | 2.34 | 1.41 | 8.39 | 9.45 | 39.1 | 50.2 | 51.6 | 73.2 | 86.5 |
|  | ***range c*** | ***3.40*−****62.0** | ***10.1*−****61.5** | **4.16−****41.6** | **16.1−****109** | **nd−****6.48** | ***nd*−****2.49** | **1.54−****17.4** | **2.92−****26.6** | **14.4−****105** | **12.6−****128** | ***89.8−******215*** | ***69.4−******224*** | ***190−******394*** |
|  | ***median*** | ***24.3*** | ***27.8*** | ***16.6*** | ***60.0*** | ***2.05*** | ***nd*** | ***7.62*** | ***13.4*** | ***57.4*** | ***53.9*** | ***143*** | ***141*** | ***298*** |
|  | ***mean*** | ***30.3*** | ***32.8*** | ***19.5*** | ***62.9*** | ***2.67*** | ***1.30*** | ***8.54*** | ***13.5*** | ***58.1*** | ***65.5*** | ***150*** | ***146*** | ***294*** |
|  | ***sd*** | ***22.7*** | ***20.1*** | ***15.0*** | ***32.3*** | ***2.61*** | ***1.22*** | ***7.20*** | ***8.56*** | ***34.8*** | ***44.5*** | ***49.6*** | ***61.3*** | ***78.7*** |
| **5th month** | range a | 5.23−59.3 | 9.00−55.9 | 2.94−37.1 | 16.4−97.5 | nd−6.79 | nd−2.64 | nd−18.1 | 2.24−25.3 | 12.5−112 | 11.0−132 | 74.2−215 | 65.2−219 | 168−366 |
| **n = 27** | median | 23.8 | 28.2 | 16.6 | 48.9 | 3.12 | nd | 8.38 | 11.8 | 46.7 | 58.5 | 129 | 122 | 248 |
|  | mean | 28.4 | 30.1 | 18.4 | 36.9 | 3.49 | 1.15 | 9.25 | 12.8 | 55.3 | 66.3 | 127 | 127 | 255 |
|  | sd | 23.9 | 19.9 | 14.3 | 9.06 | 2.72 | 0.87 | 6.76 | 9.57 | 41.4 | 52.7 | 56.2 | 74.2 | 84.2 |
|  | ***range c*** | ***5.62−******56.4*** | ***10.0−******55.9*** | ***2.96−******37.1*** | ***17.4−******100*** | ***nd−******6.63*** | ***nd−******2.85*** | ***nd−******15.2*** | ***2.44−******25.3*** | ***12.7−******113*** | ***10.8−******131*** | ***77.0−******203*** | ***67.1−******223*** | ***177−******374*** |
|  | ***median*** | ***23.6*** | ***27.6*** | ***15.6*** | ***49.8*** | ***2.22*** | ***nd*** | ***3.38*** | ***11.8*** | ***48.3*** | ***55.0*** | ***133.6*** | ***129*** | ***264*** |
|  | ***mean*** | ***27.9*** | ***30.4*** | ***17.9*** | ***55.1*** | ***2.71*** | ***1.28*** | ***5.13*** | ***12.7*** | ***56.0*** | ***64.1*** | ***135*** | ***138*** | ***273*** |
|  | ***sd*** | ***21.5*** | ***17.8*** | ***12.9*** | ***33.6*** | ***2.60*** | ***1.19*** | ***6.34*** | ***8.50*** | ***38.0*** | ***45.9*** | ***46.5*** | ***64.5*** | ***78.1*** |
| **6th month** | range a | 3.38−50.6 | 6.72−51.9 | 4.05−33.2 | 11.7−90.0 | nd−5.81 | nd−2.13 | 2.26−16.9 | 1.43−23.6 | 12.9−111 | 12.3−126 | 72.2−166 | 71.4−205 | 172−351 |
| **n = 31** | median | 20.5 | 22.6 | 14.9 | 41.5 | 2.62 | 1.03 | 8.45 | 10.6 | 53.2 | 54.8 | 107 | 127 | 257 |
|  | mean | 24.3 | 26.2 | 17.9 | 46.7 | 3.02 | 1.10 | 8.95 | 11.6 | 59.4 | 63.6 | 115 | 136 | 255 |
|  | sd | 20.2 | 18.9 | 14.1 | 32.9 | 2.43 | 0.79 | 6.20 | 9.35 | 42.6 | 48.3 | 41.6 | 60.2 | 78.2 |
|  | ***range c*** | ***3.36−******47.2*** | ***7.13−******51.5*** | ***4.27−******33.3*** | ***11.2−******93.5*** | ***nd−******6.60*** | ***nd−******3.11*** | ***1.96−******18.0*** | ***1.24−******23.4*** | ***14.7−******110*** | ***14.8−******127*** | ***76.9−******175*** | ***75.2−******212*** | ***180−******358*** |
|  | ***median*** | ***21.3*** | ***22.7*** | ***16.0*** | ***42.0*** | ***2.16*** | ***1.35*** | ***6.89*** | ***10.60*** | ***52.4*** | ***54.7*** | ***119*** | ***134*** | ***260*** |
|  | ***mean*** | ***23.6*** | ***25.6*** | ***18.7*** | ***48.8*** | ***2.66*** | ***1.46*** | ***7.68*** | ***11.7*** | ***59.6*** | ***63.5*** | ***120*** | ***142*** | ***263*** |
|  | ***sd*** | ***16.9*** | ***16.4*** | ***13.2*** | ***30.2*** | ***2.61*** | ***1.24*** | ***7.84*** | ***8.61*** | ***37.2*** | ***46.2*** | ***38.6*** | ***56.2*** | ***72.3*** |
| **7th month** | range a | 5.94−51.5 | 5.20−49.8 | 3.27−32.3 | 15.3−74.4 | nd−5.86 | nd−2.68 | 2.14−18.5 | 2.42−21.2 | 11.7−117 | 10.0−95.7 | 74.2−164 | 61.2−196 | 166−315 |
| **n = 30** | median | 24.3 | 22.9 | 16.0 | 43.5 | 2.26 | nd | 8.47 | 10.4 | 55.4 | 51.9 | 105 | 122 | 227 |
|  | mean | 26.8 | 25.5 | 17.2 | 44.7 | 2.81 | 0.84 | 9.46 | 11.0 | 58.8 | 53.5 | 11 | 121 | 244 |
|  | sd | 20.1 | 19.1 | 12.8 | 27.1 | 2.37 | 0.61 | 6.91 | 8.00 | 45.0 | 38.7 | 47 | 59.6 | 72.4 |
|  | ***range c*** | ***6.15−******50.0*** | ***5.27−******51.7*** | ***4.15−******32.9*** | ***15.1−******72.3*** | ***nd−******6.49*** | ***nd−******2.85*** | ***1.66−******17.6*** | ***2.26−******20.9*** | ***11.7−******112*** | ***10.0−******99.6*** | ***79.4−******172*** | ***62.8−******205*** | ***176−******331*** |
|  | ***median*** | ***23.9*** | ***24.2*** | ***16.0*** | ***43.5*** | ***2.09*** | ***nd*** | ***10.2*** | ***10.2*** | ***54.6*** | ***49.8*** | ***112*** | ***129*** | ***247*** |
|  | ***mean*** | ***26.6*** | ***26.4*** | ***17.9*** | ***43.7*** | ***2.61*** | ***1.27*** | ***10.3*** | ***10.8*** | ***58.1*** | ***53.7*** | ***118*** | ***133*** | ***251*** |
|  | ***sd*** | ***17.8*** | ***17.4*** | ***12.0*** | ***23.5*** | ***2.55*** | ***1.22*** | ***6.03*** | ***7.03*** | ***39.1*** | ***35.4*** | ***37.3*** | ***54.5*** | ***67.0*** |
| **8th month** | range a | 5.15−49.9 | 5.90−49.0 | 2.74−31.1 | 12.7−71.3 | nd−4.50 | nd−2.08 | 1.63−17.3 | 1.57−18.5 | 6.83−97.5 | 7.91−110 | 62.1−144 | 36.6−189 | 141−311 |
| **n = 32** | median | 18.3 | 23.1 | 13.2 | 37.2 | 2.13 | 0.85 | 66.94 | 6.76 | 47.7 | 37.8 | 104 | 122 | 215 |
|  | mean | 23.4 | 26.0 | 15.1 | 40.2 | 2.25 | 1.02 | 8.42 | 8.59 | 49.0 | 51.4 | 102 | 121 | 217 |
|  | sd | 19.1 | 18.5 | 12.0 | 25.0 | 1.83 | 0.84 | 6.70 | 6.93 | 39.6 | 47.4 | 38.4 | 63.9 | 75.2 |
|  | ***range c*** | ***6.05−******45.1*** | ***7.32−******50.6*** | ***2.70−******29.8*** | ***12.9−******71.4*** | ***nd−******6.59*** | ***nd−******3.04*** | ***1.48−******15.7*** | ***1.44−******16.9*** | ***6.47−******101*** | ***7.98−******114*** | ***67.1−******147*** | ***39.3−******193*** | ***145−******302*** |
|  | ***median*** | ***19.0*** | ***23.3*** | ***13.2*** | ***37.2*** | ***2.16*** | ***nd*** | ***2.55*** | ***6.49*** | ***46.5*** | ***49.5*** | ***108*** | ***111*** | ***224*** |
|  | ***mean*** | ***22.7*** | ***26.6*** | ***14.8*** | ***39.4*** | ***2.65*** | ***1.36*** | ***5.34*** | ***8.13*** | ***48.8*** | ***53.9*** | ***108*** | ***116*** | ***224*** |
|  | ***sd*** | ***15.9*** | ***16.8*** | ***10.6*** | ***21.8*** | ***2.58*** | ***1.24*** | ***6.14*** | ***5.91*** | ***36.4*** | ***44.6*** | ***33.0*** | ***58.0*** | ***65.1*** |
| **9th month** | range a | 3.45−39.7 | 4.34−47.0 | 2.37−25.9 | 10.4−76.1 | nd−3.84 | nd−2.54 | 1.27−14.7 | 1.27−15.1 | 10.7−94.2 | 8.09−100 | 60.4−147 | 52.7−177 | 131−282 |
| **n = 30** | median | 17.9 | 20.6 | 10.7 | 37.0 | 1.63 | nd | 7.07 | 6.65 | 45.9 | 45.0 | 94.7 | 104 | 212 |
|  | mean | 19.6 | 24.1 | 13.0 | 40.0 | 1.93 | 0.76 | 7.68 | 7.35 | 49.7 | 50.9 | 99.7 | 102 | 204 |
|  | sd | 15.6 | 18.5 | 10.4 | 28.4 | 1.52 | 0.60 | 5.73 | 5.94 | 36.4 | 38.2 | 38.2 | 56.2 | 70.6 |
|  | ***range c*** | ***3.64−******37.1*** | ***6.14−******48.8*** | ***2.23−******25.3*** | ***10.5−******74.8*** | ***nd−******6.59*** | ***nd−******3.11*** | ***1.08−******13.9*** | ***1.27−******14.5*** | ***10.5−******98.8*** | ***7.67−******101*** | ***61.4−******152*** | ***56.4−******176*** | ***134−******297*** |
|  | ***median*** | ***18.1*** | ***22.2*** | ***10.3*** | ***36.7*** | ***1.96*** | ***nd*** | ***6.05*** | ***6.25*** | ***43.9*** | ***45.2*** | ***96.2*** | ***108*** | ***204*** |
|  | ***mean*** | ***19.2*** | ***25.6*** | ***12.5*** | ***39.8*** | ***2.69*** | ***1.29*** | ***4.65*** | ***7.07*** | ***49.1*** | ***51.0*** | ***101*** | ***112*** | ***213*** |
|  | ***sd*** | ***13.5*** | ***16.8*** | ***8.97*** | ***24.1*** | ***2.60*** | ***1.23*** | ***6.07*** | ***5.14*** | ***32.9*** | ***33.2*** | ***34.7*** | ***48.0*** | ***63.2*** |
| a Range: 10th̶−90th; bnd = not detectable; cmedian creatinine corrected concentration (the bold italic, μg/g). |

 **Supplementary Figure 2**: Heat map of spearman correlation between different urinary phthalate metabolite