**Figure S1.** Pearson correlation between the concentrations (log10-transformed) among six trace elements in maternal serum (*N*=474).

Table S1 verification results of detection methods for 6 elements in serum

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Element | Linear range （μg/L） | LOD （μg/L） | LOQ （μg/L） | Regression equation | Correlation coefficiens（r） |
|  |
| Fe |  0~100 | 12.20 | 40.26 | Y=0.0398X-0.0916 | 0.9999 |  |
| Cu |  0~100 | 4.96 | 16.52 | Y=0.0913X+0.0669 | 0.9980  |  |
| Zn |  0~100 | 15.90 | 52.95 | Y=0.0121X+0.0599 | 0.9989 |  |
| Se |  0~100 | 9.88 | 32.90 | Y=4.2612E-004X+2.0328E-006 | 0.9936 |  |
| Sr |  0~10.0 | 0.72 | 2.40 | Y=0.01966X+0.011 | 0.9995 |  |
| Mo | 0~2.0 | 0.42 | 1.40 | Y=0.0427X+5.57921E-004 | 0.9999 |  |

Table S2 The results of serum quality control samples (n=5)

|  |  |  |  |
| --- | --- | --- | --- |
| Element | Control Range(mg/L) | Mean Value(mg/L) | Measured value(mg/L) |
| Fe | 0.703 - 0.951 | 0.827 | 0.728-0.945 |
| Cu | 0.630 - 0.852 | 0.741 | 0.631-0.848 |
| Zn | 0.879 - 1.19 | 1.03 | 0.883-1.16 |
| Se\* | 43.9 - 65.8 | 54.8 | 46.3-62.5 |
| Mo\* | 1.36 - 2.27 | 1.82 | 1.38-2.08 |

\*µg/L

**Table S3.** Posterior inclusion probabilities estimated by BKMR model.

|  |  |
| --- | --- |
| Element | PIPa |
|  Sr  | 0.9760  |
|  Mo  | 0.9612 |
|  Cu  | 0.6016 |
|  Zn | 0.6016 |
|  Fe  | 0.5544 |
|  Se  | 0.5364 |

a: Posterior inclusion probabilities for each trace element in component-wise variable selection.

**D**