

Table S1. Concentrations (μg kg⁻¹, wet weight) of the five heavy metals in *P. clarkii* collected from Qianjiang with detailed information of 38 sampling points. The data are presented as the mean ± SD.

| Sample numbers | Farming area | Coordinate of sampling point | Total Pb content (μg/kg) | | | | Total Hg content (μg/kg) | | | | Total Cd content (μg/kg) | | | | Total As content (μg/kg) | | | | Total Cu content (μg/kg) | | |
|----------------|-----------------|------------------------------|--------------------------|---------------|--------------|-------------|--------------------------|------------|-------------|--------------|--------------------------|------------|----------------|-----------|--------------------------|----------------|----------------|---------------|--------------------------|------------------|----------------|
| | | | Hc | Gi | He | Am | Hc | Gi | He | Am | Hc | Gi | He | Am | Hc | Gi | He | Am | Gi | He | Am |
| 1 | Yangshi Street | E112°94'38" N30°34'97" | 151.8 ± 16.7 | 203.2 ± 8.1 | 32.7 ± 3.6 | 14.1 ± 4.4 | 10.7 ± 1.2 | 7.0 ± 0.3 | 12.1 ± 0.7 | 38.5 ± 11.9 | 78.6 ± 6.3 | 13.0 ± 0.7 | 1035.0 ± 97.8 | 0.6 ± 0.1 | 1049.7 ± 376.3 | 520.7 ± 101.4 | 903.2 ± 203.5 | 123.2 ± 45.1 | 38720.0 ± 2578.0 | 9755.0 ± 892.1 | 4852.6 ± 974.6 |
| 2 | Yangshi Street | E112°83'42" N30°34'11" | 53.6 ± 5.9 | 174.5 ± 19.2 | 101.2 ± 11.1 | 11.6 ± 0.7 | 13.6 ± 1.5 | 11.5 ± 1.3 | 13.1 ± 1.4 | 26.1 ± 1.6 | 63.8 ± 8.3 | 11.0 ± 3.6 | 395.0 ± 31.7 | 0.3 ± 0.1 | 2360.3 ± 819.2 | 694.3 ± 274.3 | 1932.4 ± 651.7 | 155.7 ± 34.3 | 29900.0 ± 3994.0 | 5635.0 ± 639.4 | 3104.8 ± 467.2 |
| 3 | Yangshi Street | E112°91'88" N30°37'35" | 144.1 ± 5.8 | 116.6 ± 4.7 | 43.8 ± 4.8 | 34.0 ± 10.5 | 22.8 ± 0.9 | 13.2 ± 0.5 | 29.3 ± 3.2 | 123.3 ± 38.2 | 50.5 ± 4.7 | 9.0 ± 2.5 | 485.0 ± 49.5 | 0.1 ± 0.0 | 651.2 ± 197.1 | 398.6 ± 132.7 | 163.93 ± 21.4 | 161.39 ± 33.9 | 45000.0 ± 5877.9 | 25695.0 ± 3891.3 | 4915.1 ± 879.7 |
| 4 | Yangshi Street | E112°91'32" N30°36'89" | 178.3 ± 19.6 | 133.4 ± 14.7 | 76.6 ± 8.4 | 10.2 ± 0.4 | 20.4 ± 2.2 | 17.4 ± 1.9 | 27.5 ± 3.0 | 101.7 ± 4.1 | 56.1 ± 8.9 | 16.0 ± 5.2 | 2890.0 ± 297.8 | 0.3 ± 0.2 | 432.1 ± 129.4 | 292.5 ± 73.2 | 482.1 ± 171.1 | 86.7 ± 33.2 | 71180.0 ± 6458.5 | 19730.0 ± 1845.0 | 1592.7 ± 471.1 |
| 5 | Zhugentan town | E112°93'23" N30°55'32" | 303.9 ± 33.4 | 85.9 ± 23.5 | 21.6 ± 2.4 | 23.2 ± 2.6 | 14.1 ± 1.6 | 23.8 ± 6.5 | 11.2 ± 1.2 | 54.3 ± 6.0 | 78.8 ± 9.1 | 4.0 ± 0.9 | 575.0 ± 86.8 | 0.3 ± 0.1 | 482.7 ± 193.3 | 275.1 ± 97.1 | 262.3 ± 74.6 | 142.2 ± 56.3 | 21830.0 ± 1896.7 | 7260.0 ± 797.6 | 4298.8 ± 598.2 |
| 6 | Zhugentan town | E112°91'22" N30°56'56" | 237.5 ± 26.1 | 149.0 ± 40.7 | 47.4 ± 5.2 | 17.6 ± 1.1 | 11.5 ± 1.3 | 29.4 ± 8.0 | 12.8 ± 1.4 | 41.6 ± 2.5 | 63.4 ± 11.4 | 9.0 ± 2.3 | 535.0 ± 102.1 | 0.3 ± 0.0 | 1044.6 ± 351.4 | 310.5 ± 124.2 | 256.5 ± 68.3 | 121.4 ± 44.7 | 33010.0 ± 4988.3 | 5685.0 ± 673.4 | 910.8 ± 101.9 |
| 7 | Wangchang town | E112°77'23" N30°48'76" | 168.7 ± 18.6 | 267.1 ± 10.7 | 58.1 ± 6.4 | 21.2 ± 2.3 | 32.9 ± 3.6 | 15.6 ± 0.6 | 24.7 ± 2.7 | 145.5 ± 16 | 89.6 ± 15.6 | 7.5 ± 1.7 | 1110.0 ± 302.7 | 0.9 ± 0.4 | 445.3 ± 143.7 | 394.7 ± 87.2 | 268.1 ± 94.2 | 99.4 ± 27.8 | 70380.0 ± 10957.8 | 66500.0 ± 9785.4 | 328.7 ± 89.5 |
| 8 | Wangchang town | E112°72'89" N30°51'24" | 186.6 ± 20.5 | 135.7 ± 50.2 | 75.8 ± 8.3 | 25.3 ± 6.9 | 28.1 ± 3.1 | 18.7 ± 2.1 | 31.5 ± 3.5 | 124.2 ± 33.9 | 47.8 ± 7.5 | 7.0 ± 1.6 | 650.0 ± 79.2 | 0.1 ± 0.0 | 377.3 ± 109.5 | 392.1 ± 97.7 | 323.4 ± 139.2 | 95.0 ± 31.4 | 54040.0 ± 1890.6 | 10165.0 ± 958.7 | 662.9 ± 123.5 |
| 9 | Guanghua Street | E112°70'77" N30°40'19" | 715.2 ± 376.7 | 61.7 ± 6.8 | 70.0 ± 7.7 | 34.7 ± 12.8 | 28.3 ± 8.8 | 13.5 ± 1.5 | 61.6 ± 6.8 | 92.9 ± 10.2 | 102.3 ± 19.8 | 5.0 ± 1.1 | 925.0 ± 157.9 | 1.0 ± 0.3 | 1683.8 ± 689.7 | 313.7 ± 103.9 | 500.1 ± 213. 6 | 206.6 ± 81.7 | 36020.0 ± 2896.3 | 34950.0 ± 4588.9 | 5570.8 ± 784.3 |
| 10 | Guanghua Street | E112°74'69" N30°41'38" | 181.6 ± 20.0 | 179.4 ± 19.7 | 21.5 ± 1.3 | 20.4 ± 7.3 | 17.8 ± 2.0 | 21.4 ± 2.4 | 30.1 ± 1.8 | 31.3 ± 11.3 | 136.3 ± 21.7 | 22.0 ± 3.7 | 2245.0 ± 474.5 | 1.6 ± 0.7 | 375.0 ± 38.4 | 480.2 ± 57.9 | 198.0 ± 27.8 | 125.5 ± 28.2 | 116570.0 ± 17765.0 | 9825.0 ± 791.2 | 1419.0 ± 497.2 |
| 11 | Jiyukou town | E112°66'54" N30°47'18" | 263.9 ± 29.0 | 178.4 ± 19.6 | 44.0 ± 4.8 | 21.5 ± 5.9 | 19.4 ± 2.1 | 21.8 ± 2.4 | 37.3 ± 4.1 | 88.9 ± 24.3 | 54.9 ± 12.4 | 16.0 ± 3.5 | 1650.0 ± 378.3 | 0.3 ± 0.1 | 628.7 ± 89.1 | 376.1 ± 69.3 | 279.6 ± 78.1 | 88.7 ± 12.3 | 79220.0 ± 8940.1 | 64305.0 ± 4798.6 | 383.4 ± 57.7 |
| 12 | Jiyukou town | E112°68'67" N30°47'03" | 24.2 ± 2.7 | 90.5 ± 33.5 | 43.4 ± 4.8 | 12.7 ± 1.4 | 15.3 ± 1.7 | 22.2 ± 2.4 | 33.0 ± 3.6 | 86.4 ± 9.5 | 67.7 ± 23.2 | 4.5 ± 0.9 | 720.0 ± 101.4 | 0.3 ± 0.1 | 660.8 ± 101.2 | 217.9 ± 45.8 | 438.4 ± 56.2 | 91.2 ± 11.3 | 70420.0 ± 2044.0 | 23000.0 ± 3941.0 | 4149.2 ± 982.8 |
| 13 | Jiyukou town | E112°59'63" N30°42'58" | 387.3 ± 42.6 | 232.8 ± 9.3 | 51.7 ± 5.7 | 23.3 ± 2.6 | 66.2 ± 7.3 | 24.1 ± 1.0 | 53.2 ± 5.9 | 140.2 ± 15.4 | 61.6 ± 11.8 | 9.5 ± 1.7 | 1665.0 ± 297.4 | 3.8 ± 1.1 | 626.6 ± 91.3 | 515.6 ± 52.4 | 239.8 ± 63.4 | 99.8 ± 14.7 | 42730.0 ± 5789.0 | 15725.0 ± 2988.5 | 506.0 ± 89.7 |
| 14 | Jiyukou town | E112°57'99" N30°42'13" | 393.6 ± 43.3 | 389.7 ± 106.4 | 34.3 ± 3.8 | 20.4 ± 6.3 | 18.6 ± 2.0 | 13.8 ± 3.8 | 32.0 ± 3.5 | 88.0 ± 27.3 | 21.2 ± 5.4 | 6.0 ± 2.2 | 1760.0 ± 345.1 | 0.3 ± 0.1 | 727.8 ± 122.4 | 1553.1 ± 398.1 | 347.1 ± 72.7 | 166.0 ± 38.2 | 60080.0 ± 7080.0 | 18580.0 ± 3987.0 | 550.6 ± 71.4 |
| 15 | Gaoshibei town | E112°65'92" N30°52'65" | 567.7 ± 210.1 | 81.3 ± 8.9 | 53.8 ± 5.9 | 42.1 ± 4.6 | 12.7 ± 0.5 | 12.5 ± 1.4 | 27.3 ± 3.0 | 44.3 ± 4.9 | 34.5 ± 9.5 | 4.5 ± 1.2 | 1210.0 ± 179.3 | 0.6 ± 0.2 | 575.9 ± 39.9 | 398.6 ± 41.7 | 211.5 ± 19.8 | 128.7 ± 29.1 | 38830.0 ± 4711.0 | 74945.0 ± 7835.2 | 4807.0 ± 398.6 |
| 16 | Gaoshibei town | E112°67'63" N30°48'78" | 338.2 ± 121.8 | 81.4 ± 9.0 | 56.4 ± 6.2 | 17.3 ± 4.7 | 53.8 ± 19.4 | 23.4 ± 2.6 | 30.2 ± 1.8 | 228.2 ± 62.3 | 39.0 ± 7.9 | 7.5 ± 2.7 | 1080.0 ± 165.2 | 0.3 ± 0.1 | 330.0 ± 47.9 | 289.3 ± 27.2 | 262.9 ± 31.4 | 125.1 ± 13.4 | 35400.0 ± 3850.0 | 11380.0 ± 3520.0 | 3773.8 ± 981.3 |
| 17 | Zongkou Street | E112°92'42" N30°26'34" | 528.0 ± 58.1 | 66.4 ± 4.0 | 66.7 ± 7.3 | 31.0 ± 11.2 | 10.0 ± 1.1 | 8.5 ± 0.5 | 16.5 ± 1.8 | 46.6 ± 16.8 | 18.3 ± 5.8 | 5.5 ± 1.3 | 660.0 ± 97.3 | 0.6 ± 0.1 | 750.5 ± 78.6 | 288.6 ± 39.5 | 1120.5 ± 106.4 | 93.9 ± 19.7 | 33500.0 ± 3660.0 | 14935.0 ± 2673.5 | 517.9 ± 77.4 |
| 18 | Zongkou Street | E112°93'06" N30°27'34" | 300.5 ± 33.1 | 224.4 ± 69.6 | 59.3 ± 6.5 | 30.1 ± 3.3 | 13.9 ± 1.5 | 12.1 ± 3.8 | 30.7 ± 3.4 | 58.9 ± 6.5 | 42.7 ± 11.4 | 13.0 ± 2.7 | 555.0 ± 101.4 | 0.3 ± 0.0 | 723.8 ± 94.5 | 392.8 ± 71.0 | 836.4 ± 123.3 | 127.5 ± 12.3 | 58880.0 ± 4782.0 | 10615.0 ± 2891.4 | 587.6 ± 101.3 |
| 19 | Yuyang town | E112°91'18" N30°19'07" | 89.9 ± 24.5 | 583.5 ± 64.2 | 151.8 ± 6.1 | 59.1 ± 21.9 | 20.1 ± 5.5 | 14.7 ± 1.6 | 28.4 ± 1.1 | 79.4 ± 8.7 | 49.0 ± 9.2 | 14.5 ± 4.7 | 995.0 ± 178.1 | 0.6 ± 0.3 | 700.1 ± 149.7 | 1089.0 ± 137.5 | 645.4 ± 92.8 | 145.0 ± 23.7 | 49630.0 ± 4736.0 | 90545.0 ± 3678.5 | 4677.3 ± 578.1 |
| 20 | Yuyang town | E112°98'21" N30°18'14" | 272.4 ± 30.0 | 355.1 ± 39.1 | 202.7 ± 22.3 | 30.4 ± 11.0 | 26.9 ± 3.0 | 12.3 ± 1.4 | 23.2 ± 2.6 | 61.8 ± 22.2 | 51.4 ± 8.7 | 8.5 ± 1.6 | 695.0 ± 123.5 | 0.6 ± 0.2 | 670.7 ± 165.4 | 738.6 ± 94.8 | 1727.4 ± 249.8 | 111.0 ± 23.2 | 37450.0 ± 3840.0 | 23530.0 ± 1487.0 | 310.6 ± 47.6 |
| 21 | Laoxin town | E112°72'42" N30°13'45" | 88.8 ± 3.6 | 278.1 ± 30.6 | 69.4 ± 25.7 | 30.8 ± 8.4 | 21.9 ± 0.9 | 14.9 ± 1.6 | 29.7 ± 3.3 | 91.0 ± 24.8 | 26.4 ± 9.3 | 7.5 ± 1.9 | 1805.0 ± 571.4 | 0.1 ± 0.0 | 410.6 ± 89.2 | 464.8 ± 45.5 | 154.9 ± 23.2 | 50.8 ± 9.7 | 62110.0 ± 6460.0 | 17698.1 ± 3144.2 | 2792.3 ± 598.4 |
| 22 | Laoxin town | E112°72'86" N30°14'75" | 399.2 ± 43.9 | 204.9 ± 8.2 | 74.6 ± 23.1 | 23.3 ± 1.4 | 14.5 ± 1.6 | 12.6 ± 0.5 | 37.0 ± 11.5 | 89.4 ± 5.4 | 50.4 ± 12.9 | 16.5 ± 5.5 | 1945.0 ± 643.2 | 1.0 ± 0.4 | 499.5 ± 48.3 | 528.4 ± 63.1 | 516.9 ± 79.4 | 149.9 ± 34.4 | 42540.0 ± 5280.0 | 64055.0 ± 7834.0 | 5293.0 ± 739.1 |
| 23 | Laoxin town | E112°73'29" N30°18'43" | 222.1 ± 24.4 | 114.8 ± 12.6 | 76.1 ± 8.4 | 18.5 ± 2.0 | 21.2 ± 2.3 | 11.4 ± 1.3 | 19.8 ± 2.2 | 79.0 ± 8.7 | 91.0 ± 32.3 | 19.0 ± 4.7 | 1075.0 ± 239.8 | 0.1 ± 0.0 | 809.6 ± 101.4 | 338.8 ± 54.2 | 433.3 ± 59.4 | 116.5 ± 39.9 | 27720.0 ± 4790.0 | 12500.0 ± 2317.0 | 2772.7 ± 221.9 |
| 24 | Laoxin town | E112°79'89" N30°20'67" | 212.7 ± 76.6 | 210.4 ± 23.1 | 107.8 ± 11.9 | 16.8 ± 4.6 | 22.8 ± 8.2 | 73.3 ± 8.1 | 9.3 ± 1.0 | 52.6 ± 14.4 | 58.3 ± 19.5 | 18.0 ± 4.2 | 1910.0 ± 529.3 | 0.6 ± 0.2 | 605.6 ± 94.6 | 596.6 ± 112.3 | 1281.2 ± 239.3 | 88.8 ± 12.5 | 66920.0 ± 5710.0 | 40590.0 ± 6730.0 | 5716.5 ± 673.7 |
| 25 | Xiongkou town | E112°80'01" N30°24'18" | 173.6 ± 19.1 | 54.5 ± 20.2 | 41.4 ± 4.6 | 16.2 ± 1.8 | 11.4 ± 1.2 | 12.7 ± 1.4 | 12.2 ± 1.3 | 74.0 ± 8.1 | 72.5 ± 21.9 | 17.0 ± 5.5 | 1575.0 ± 295.7 | 1.0 ± 0.5 | 1488.2 ± 298.4 | 617.1 ± 100.4 | 3390.4 ± 798 | | | | |

Table S2. The parameters of elemental determinations by GFAAS and AAS methods.

| element | Instrument | | | | | | |
|-------------------------------------|------------|---|------------|--------------|---------------|----------------------|---------|
| graphite furnace heating procedure | | | | | | | |
| | | dry | incinerate | atomization | clean | | |
| Pb | AA240Z | 120°C, 22s | 600°C, 15s | 1000°C, 5s | 2500°C, 2s | | |
| Cd | | 110°C, 20s | 300°C, 20s | 900°C, 3s | 2500°C, 3s | | |
| operating conditions of instruments | | | | | | | |
| | | wavelength | lamp | transmission | graphite tube | background | |
| | | | current | band | type | correction | |
| Pb | | 217.0nm | 90% | 0.5nm | Coated | Zeeman | |
| | | | | | graphite tube | | |
| Cd | | 228.8nm | 50% | 0.5nm | Coated | Zeeman | |
| | | | | | graphite tube | | |
| | AA240FS | wavelength | lamp | slit | gas flow | combustion | |
| | | | current | | | head height | |
| Cu | | 324.7nm | 75% | 0.5nm | 1.1 L/min | 7.0 mm | |
| | | Negative high voltage of Photomultiplier tube | lamp | gas flow | absorption | deoxidizer | carrier |
| | | | current | | tube | | liquid |
| As | AFS-3100 | 270V | 60mA | 400mL/min | heat (850°C) | 2% NaBH4 + 0.5% NaOH | 5% HCl |
| Hg | | 280V | 25mA | 400mL/min | heat (850°C) | 2% NaBH4 + 0.5% NaOH | 5% HCl |

Table S3. The values of the elements contents ($\mu\text{g kg}^{-1}$) determined by given methods in CRM, recovery values (%), RSD (%) and LOQ values ($\mu\text{g kg}^{-1}$).

| | Pb | Cd | As | Cu |
|--------------------------------------|-----------------|------------------|------------------|--------------------|
| CRM values ($\mu\text{g kg}^{-1}$) | 101.7 \pm 3.8 | 318.2 \pm 45.9 | 236.5 \pm 21.4 | 2319.2 \pm 195.3 |
| Recovery (Mean %) | 97.23 | 106.43 | 102.41 | 100.31 |
| RSD (%) | 3.76 | 2.37 | 3.19 | 1.16 |
| LOQ ($\mu\text{g kg}^{-1}$) | 0.04 | 0.9 | < 0.01 | 0.2 |

Table S4. EDI (mg kg⁻¹ day⁻¹) for children (20kg).

| Sample numbers | Pb | | Hg | | Cd | | As | | Cu | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | He | Am | He | Am | He | Am | He | Am | He | Am |
| 1 | 1.09×10 ⁻⁶ | 1.00×10 ⁻⁶ | 4.03×10 ⁻⁷ | 2.74×10 ⁻⁶ | 3.45×10 ⁻⁵ | 4.56×10 ⁻⁸ | 9.02×10 ⁻⁷ | 2.63×10 ⁻⁷ | 3.25×10 ⁻⁴ | 3.45×10 ⁻⁴ |
| 2 | 3.37×10 ⁻⁶ | 8.25×10 ⁻⁷ | 4.36×10 ⁻⁷ | 1.86×10 ⁻⁶ | 1.32×10 ⁻⁵ | 2.24×10 ⁻⁸ | 1.93×10 ⁻⁶ | 3.32×10 ⁻⁷ | 1.88×10 ⁻⁴ | 2.21×10 ⁻⁴ |
| 3 | 1.46×10 ⁻⁶ | 2.42×10 ⁻⁶ | 9.76×10 ⁻⁷ | 8.77×10 ⁻⁶ | 1.62×10 ⁻⁵ | 7.11×10 ⁻⁹ | 1.64×10 ⁻⁷ | 3.44×10 ⁻⁷ | 8.56×10 ⁻⁴ | 3.50×10 ⁻⁴ |
| 4 | 2.55×10 ⁻⁶ | 7.26×10 ⁻⁷ | 9.16×10 ⁻⁷ | 7.24×10 ⁻⁶ | 9.63×10 ⁻⁵ | 2.14×10 ⁻⁸ | 4.82×10 ⁻⁷ | 1.85×10 ⁻⁷ | 6.57×10 ⁻⁴ | 1.13×10 ⁻⁴ |
| 5 | 7.19×10 ⁻⁷ | 1.65×10 ⁻⁶ | 3.73×10 ⁻⁷ | 3.86×10 ⁻⁶ | 1.92×10 ⁻⁵ | 2.26×10 ⁻⁸ | 2.62×10 ⁻⁷ | 3.03×10 ⁻⁷ | 2.42×10 ⁻⁴ | 3.06×10 ⁻⁴ |
| 6 | 1.58×10 ⁻⁶ | 1.25×10 ⁻⁶ | 4.26×10 ⁻⁷ | 2.96×10 ⁻⁶ | 1.78×10 ⁻⁵ | 2.19×10 ⁻⁸ | 2.56×10 ⁻⁷ | 2.59×10 ⁻⁷ | 1.89×10 ⁻⁴ | 6.48×10 ⁻⁵ |
| 7 | 1.94×10 ⁻⁶ | 1.51×10 ⁻⁶ | 8.23×10 ⁻⁷ | 1.04×10 ⁻⁵ | 3.70×10 ⁻⁵ | 6.30×10 ⁻⁸ | 2.68×10 ⁻⁷ | 2.12×10 ⁻⁷ | 2.21×10 ⁻³ | 2.34×10 ⁻⁵ |
| 8 | 2.52×10 ⁻⁶ | 1.80×10 ⁻⁶ | 1.05×10 ⁻⁶ | 8.84×10 ⁻⁶ | 2.16×10 ⁻⁵ | 7.11×10 ⁻⁹ | 3.23×10 ⁻⁷ | 2.03×10 ⁻⁷ | 3.39×10 ⁻⁴ | 4.72×10 ⁻⁵ |
| 9 | 2.33×10 ⁻⁶ | 2.47×10 ⁻⁶ | 2.05×10 ⁻⁶ | 6.61×10 ⁻⁶ | 3.08×10 ⁻⁵ | 6.79×10 ⁻⁸ | 5.00×10 ⁻⁷ | 4.41×10 ⁻⁷ | 1.16×10 ⁻³ | 3.96×10 ⁻⁴ |
| 10 | 7.16×10 ⁻⁷ | 1.45×10 ⁻⁶ | 1.00×10 ⁻⁶ | 2.23×10 ⁻⁶ | 7.48×10 ⁻⁵ | 1.12×10 ⁻⁷ | 1.98×10 ⁻⁷ | 2.68×10 ⁻⁷ | 3.27×10 ⁻⁴ | 1.01×10 ⁻⁴ |
| 11 | 1.47×10 ⁻⁶ | 1.53×10 ⁻⁶ | 1.24×10 ⁻⁶ | 6.32×10 ⁻⁶ | 5.50×10 ⁻⁵ | 2.18×10 ⁻⁸ | 2.79×10 ⁻⁷ | 1.89×10 ⁻⁷ | 2.14×10 ⁻³ | 2.73×10 ⁻⁵ |
| 12 | 1.45×10 ⁻⁶ | 9.04×10 ⁻⁷ | 1.10×10 ⁻⁶ | 6.15×10 ⁻⁶ | 2.40×10 ⁻⁵ | 2.19×10 ⁻⁸ | 4.38×10 ⁻⁷ | 1.95×10 ⁻⁷ | 7.66×10 ⁻⁴ | 2.95×10 ⁻⁴ |
| 13 | 1.72×10 ⁻⁶ | 1.66×10 ⁻⁶ | 1.77×10 ⁻⁶ | 9.97×10 ⁻⁶ | 5.55×10 ⁻⁵ | 2.73×10 ⁻⁷ | 2.40×10 ⁻⁷ | 2.13×10 ⁻⁷ | 5.24×10 ⁻⁴ | 3.60×10 ⁻⁵ |
| 14 | 1.14×10 ⁻⁶ | 1.45×10 ⁻⁶ | 1.07×10 ⁻⁶ | 6.26×10 ⁻⁶ | 5.86×10 ⁻⁵ | 2.27×10 ⁻⁸ | 3.47×10 ⁻⁷ | 3.54×10 ⁻⁷ | 6.19×10 ⁻⁴ | 3.92×10 ⁻⁵ |
| 15 | 1.79×10 ⁻⁶ | 3.00×10 ⁻⁶ | 9.09×10 ⁻⁷ | 3.15×10 ⁻⁶ | 4.03×10 ⁻⁵ | 4.51×10 ⁻⁸ | 2.11×10 ⁻⁷ | 2.75×10 ⁻⁷ | 2.50×10 ⁻³ | 3.42×10 ⁻⁴ |
| 16 | 1.88×10 ⁻⁶ | 1.23×10 ⁻⁶ | 1.01×10 ⁻⁶ | 1.62×10 ⁻⁵ | 3.60×10 ⁻⁵ | 2.28×10 ⁻⁸ | 2.63×10 ⁻⁷ | 2.67×10 ⁻⁷ | 3.79×10 ⁻⁴ | 2.68×10 ⁻⁴ |
| 17 | 2.22×10 ⁻⁶ | 2.21×10 ⁻⁶ | 5.50×10 ⁻⁷ | 3.32×10 ⁻⁶ | 2.20×10 ⁻⁵ | 4.33×10 ⁻⁸ | 1.12×10 ⁻⁶ | 2.00×10 ⁻⁷ | 4.97×10 ⁻⁴ | 3.68×10 ⁻⁵ |
| 18 | 1.97×10 ⁻⁶ | 2.14×10 ⁻⁶ | 1.02×10 ⁻⁶ | 4.19×10 ⁻⁶ | 1.85×10 ⁻⁵ | 2.08×10 ⁻⁸ | 8.36×10 ⁻⁷ | 2.72×10 ⁻⁷ | 3.54×10 ⁻⁴ | 4.18×10 ⁻⁵ |
| 19 | 5.06×10 ⁻⁶ | 4.20×10 ⁻⁶ | 9.46×10 ⁻⁷ | 5.65×10 ⁻⁶ | 3.31×10 ⁻⁵ | 4.31×10 ⁻⁸ | 6.45×10 ⁻⁷ | 3.09×10 ⁻⁷ | 3.02×10 ⁻³ | 3.33×10 ⁻⁴ |
| 20 | 6.75×10 ⁻⁶ | 2.16×10 ⁻⁶ | 7.73×10 ⁻⁷ | 4.40×10 ⁻⁶ | 2.31×10 ⁻⁵ | 4.37×10 ⁻⁸ | 1.73×10 ⁻⁶ | 2.37×10 ⁻⁷ | 7.84×10 ⁻⁴ | 2.21×10 ⁻⁵ |
| 21 | 2.31×10 ⁻⁶ | 2.19×10 ⁻⁶ | 9.89×10 ⁻⁷ | 6.47×10 ⁻⁶ | 6.01×10 ⁻⁵ | 7.11×10 ⁻⁹ | 1.55×10 ⁻⁷ | 1.08×10 ⁻⁷ | 5.89×10 ⁻⁴ | 1.99×10 ⁻⁴ |
| 22 | 2.48×10 ⁻⁶ | 1.66×10 ⁻⁶ | 1.23×10 ⁻⁶ | 6.36×10 ⁻⁶ | 6.48×10 ⁻⁵ | 6.82×10 ⁻⁸ | 5.16×10 ⁻⁷ | 3.20×10 ⁻⁷ | 2.13×10 ⁻³ | 3.77×10 ⁻⁴ |
| 23 | 2.53×10 ⁻⁶ | 1.32×10 ⁻⁶ | 6.59×10 ⁻⁷ | 5.62×10 ⁻⁶ | 3.58×10 ⁻⁵ | 7.11×10 ⁻⁹ | 4.33×10 ⁻⁷ | 2.49×10 ⁻⁷ | 4.16×10 ⁻⁴ | 1.97×10 ⁻⁴ |
| 24 | 3.59×10 ⁻⁶ | 1.20×10 ⁻⁶ | 3.10×10 ⁻⁷ | 3.74×10 ⁻⁶ | 6.36×10 ⁻⁵ | 4.51×10 ⁻⁸ | 1.28×10 ⁻⁶ | 1.90×10 ⁻⁷ | 1.35×10 ⁻³ | 4.07×10 ⁻⁴ |
| 25 | 1.38×10 ⁻⁶ | 1.15×10 ⁻⁶ | 4.06×10 ⁻⁷ | 5.26×10 ⁻⁶ | 5.25×10 ⁻⁵ | 6.93×10 ⁻⁸ | 3.39×10 ⁻⁶ | 2.08×10 ⁻⁷ | 2.30×10 ⁻⁴ | 1.39×10 ⁻⁴ |
| 26 | 1.82×10 ⁻⁶ | 1.40×10 ⁻⁶ | 5.89×10 ⁻⁷ | 5.04×10 ⁻⁶ | 3.13×10 ⁻⁵ | 6.78×10 ⁻⁸ | 4.13×10 ⁻⁷ | 1.94×10 ⁻⁷ | 7.64×10 ⁻⁴ | 8.07×10 ⁻⁶ |
| 27 | 2.48×10 ⁻⁶ | 2.35×10 ⁻⁶ | 8.13×10 ⁻⁷ | 3.55×10 ⁻⁶ | 6.03×10 ⁻⁵ | 1.31×10 ⁻⁷ | 3.91×10 ⁻⁷ | 2.48×10 ⁻⁷ | 5.24×10 ⁻³ | 3.78×10 ⁻⁴ |
| 28 | 4.82×10 ⁻⁶ | 2.49×10 ⁻⁶ | 5.93×10 ⁻⁷ | 3.62×10 ⁻⁶ | 3.10×10 ⁻⁵ | 2.06×10 ⁻⁸ | 3.71×10 ⁻⁷ | 1.35×10 ⁻⁷ | 6.35×10 ⁻⁴ | 3.74×10 ⁻⁴ |
| 29 | 1.46×10 ⁻⁶ | 1.48×10 ⁻⁶ | 1.80×10 ⁻⁶ | 9.52×10 ⁻⁶ | 1.12×10 ⁻⁵ | 7.11×10 ⁻⁹ | 2.40×10 ⁻⁷ | 3.04×10 ⁻⁷ | 7.95×10 ⁻⁴ | 8.66×10 ⁻⁵ |
| 30 | 1.71×10 ⁻⁶ | 3.06×10 ⁻⁶ | 1.65×10 ⁻⁶ | 1.01×10 ⁻⁵ | 5.51×10 ⁻⁵ | 2.28×10 ⁻⁸ | 2.61×10 ⁻⁷ | 2.38×10 ⁻⁷ | 1.91×10 ⁻³ | 9.04×10 ⁻⁵ |
| 31 | 2.17×10 ⁻⁶ | 2.34×10 ⁻⁶ | 1.22×10 ⁻⁶ | 2.75×10 ⁻⁶ | 4.83×10 ⁻⁵ | 6.69×10 ⁻⁸ | 1.00×10 ⁻⁶ | 3.24×10 ⁻⁷ | 3.56×10 ⁻⁴ | 3.24×10 ⁻⁴ |
| 32 | 1.21×10 ⁻⁶ | 1.34×10 ⁻⁶ | 4.83×10 ⁻⁷ | 9.53×10 ⁻⁶ | 3.18×10 ⁻⁵ | 7.11×10 ⁻⁹ | 6.02×10 ⁻⁷ | 1.87×10 ⁻⁷ | 2.14×10 ⁻³ | 2.34×10 ⁻⁴ |
| 33 | 1.22×10 ⁻⁶ | 8.89×10 ⁻⁷ | 1.61×10 ⁻⁶ | 7.31×10 ⁻⁶ | 5.91×10 ⁻⁵ | 7.11×10 ⁻⁹ | 5.46×10 ⁻⁷ | 3.86×10 ⁻⁷ | 4.93×10 ⁻⁴ | 1.85×10 ⁻⁵ |
| 34 | 4.59×10 ⁻⁶ | 1.99×10 ⁻⁶ | 7.36×10 ⁻⁷ | 4.63×10 ⁻⁶ | 3.73×10 ⁻⁵ | 7.11×10 ⁻⁹ | 6.38×10 ⁻⁷ | 3.23×10 ⁻⁷ | 3.52×10 ⁻⁴ | 2.50×10 ⁻⁴ |
| 35 | 1.27×10 ⁻⁶ | 1.22×10 ⁻⁶ | 1.58×10 ⁻⁶ | 8.03×10 ⁻⁶ | 5.76×10 ⁻⁵ | 4.43×10 ⁻⁸ | 3.04×10 ⁻⁷ | 2.52×10 ⁻⁷ | 8.75×10 ⁻⁴ | 3.66×10 ⁻⁴ |
| 36 | 3.64×10 ⁻⁶ | 1.34×10 ⁻⁶ | 1.14×10 ⁻⁶ | 1.37×10 ⁻⁵ | 2.83×10 ⁻⁵ | 1.33×10 ⁻⁷ | 6.09×10 ⁻⁷ | 2.23×10 ⁻⁷ | 1.11×10 ⁻³ | 5.17×10 ⁻⁴ |
| 37 | 3.76×10 ⁻⁶ | 6.26×10 ⁻⁷ | 1.38×10 ⁻⁶ | 6.38×10 ⁻⁶ | 4.45×10 ⁻⁵ | 2.15×10 ⁻⁸ | 2.57×10 ⁻⁷ | 1.85×10 ⁻⁷ | 1.97×10 ⁻⁴ | 6.26×10 ⁻⁵ |
| 38 | 1.36×10 ⁻⁶ | 1.89×10 ⁻⁶ | 6.56×10 ⁻⁷ | 2.24×10 ⁻⁶ | 4.95×10 ⁻⁵ | 5.92×10 ⁻⁷ | 7.46×10 ⁻⁷ | 4.27×10 ⁻⁷ | 7.09×10 ⁻³ | 8.40×10 ⁻⁵ |

Table S5. EDI (mg kg⁻¹ day⁻¹) for adults (70kg).

| Sample numbers | Pb | | Hg | | Cd | | As | | Cu | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | He | Am | He | Am | He | Am | He | Am | He | Am |
| 1 | 3.11×10 ⁻⁷ | 2.87×10 ⁻⁷ | 1.15×10 ⁻⁷ | 7.83×10 ⁻⁷ | 9.85×10 ⁻⁶ | 1.30×10 ⁻⁸ | 2.58×10 ⁻⁷ | 7.51×10 ⁻⁸ | 9.28×10 ⁻⁵ | 9.86×10 ⁻⁵ |
| 2 | 9.63×10 ⁻⁷ | 2.36×10 ⁻⁷ | 1.25×10 ⁻⁷ | 5.31×10 ⁻⁷ | 3.76×10 ⁻⁶ | 6.39×10 ⁻⁹ | 5.52×10 ⁻⁷ | 9.50×10 ⁻⁸ | 5.36×10 ⁻⁵ | 6.31×10 ⁻⁵ |
| 3 | 4.17×10 ⁻⁷ | 6.91×10 ⁻⁷ | 2.79×10 ⁻⁷ | 2.51×10 ⁻⁶ | 4.62×10 ⁻⁶ | 2.03×10 ⁻⁹ | 4.68×10 ⁻⁸ | 9.84×10 ⁻⁸ | 2.45×10 ⁻⁴ | 9.99×10 ⁻⁵ |
| 4 | 7.29×10 ⁻⁷ | 2.07×10 ⁻⁷ | 2.62×10 ⁻⁷ | 2.07×10 ⁻⁶ | 2.75×10 ⁻⁵ | 6.12×10 ⁻⁹ | 1.38×10 ⁻⁷ | 5.29×10 ⁻⁸ | 1.88×10 ⁻⁴ | 3.24×10 ⁻⁵ |
| 5 | 2.06×10 ⁻⁷ | 4.72×10 ⁻⁷ | 1.07×10 ⁻⁷ | 1.10×10 ⁻⁶ | 5.47×10 ⁻⁶ | 6.46×10 ⁻⁹ | 7.49×10 ⁻⁸ | 8.67×10 ⁻⁸ | 6.91×10 ⁻⁵ | 8.74×10 ⁻⁵ |
| 6 | 4.51×10 ⁻⁷ | 3.58×10 ⁻⁷ | 1.22×10 ⁻⁷ | 8.46×10 ⁻⁷ | 5.09×10 ⁻⁶ | 6.27×10 ⁻⁹ | 7.32×10 ⁻⁸ | 7.40×10 ⁻⁸ | 5.41×10 ⁻⁵ | 1.85×10 ⁻⁵ |
| 7 | 5.53×10 ⁻⁷ | 4.31×10 ⁻⁷ | 2.35×10 ⁻⁷ | 2.96×10 ⁻⁶ | 1.06×10 ⁻⁵ | 1.80×10 ⁻⁸ | 7.65×10 ⁻⁸ | 6.06×10 ⁻⁸ | 6.33×10 ⁻⁴ | 6.68×10 ⁻⁶ |
| 8 | 7.21×10 ⁻⁷ | 5.14×10 ⁻⁷ | 3.00×10 ⁻⁷ | 2.52×10 ⁻⁶ | 6.19×10 ⁻⁶ | 2.03×10 ⁻⁹ | 9.23×10 ⁻⁸ | 5.79×10 ⁻⁸ | 9.67×10 ⁻⁵ | 1.35×10 ⁻⁵ |
| 9 | 6.66×10 ⁻⁷ | 7.05×10 ⁻⁷ | 5.86×10 ⁻⁷ | 1.89×10 ⁻⁶ | 8.80×10 ⁻⁶ | 1.94×10 ⁻⁸ | 1.43×10 ⁻⁷ | 1.26×10 ⁻⁷ | 3.33×10 ⁻⁴ | 1.13×10 ⁻⁴ |
| 10 | 2.05×10 ⁻⁷ | 4.15×10 ⁻⁷ | 2.86×10 ⁻⁷ | 6.36×10 ⁻⁷ | 2.14×10 ⁻⁵ | 3.19×10 ⁻⁸ | 5.65×10 ⁻⁸ | 7.66×10 ⁻⁸ | 9.35×10 ⁻⁵ | 2.88×10 ⁻⁵ |
| 11 | 4.19×10 ⁻⁷ | 4.37×10 ⁻⁷ | 3.55×10 ⁻⁷ | 1.81×10 ⁻⁶ | 1.57×10 ⁻⁵ | 6.23×10 ⁻⁹ | 7.98×10 ⁻⁸ | 5.41×10 ⁻⁸ | 6.12×10 ⁻⁴ | 7.79×10 ⁻⁶ |
| 12 | 4.13×10 ⁻⁷ | 2.58×10 ⁻⁷ | 3.14×10 ⁻⁷ | 1.76×10 ⁻⁶ | 6.85×10 ⁻⁶ | 6.27×10 ⁻⁹ | 1.25×10 ⁻⁷ | 5.56×10 ⁻⁸ | 2.19×10 ⁻⁴ | 8.43×10 ⁻⁵ |
| 13 | 4.92×10 ⁻⁷ | 4.74×10 ⁻⁷ | 5.06×10 ⁻⁷ | 2.85×10 ⁻⁶ | 1.58×10 ⁻⁵ | 7.79×10 ⁻⁸ | 6.85×10 ⁻⁸ | 6.09×10 ⁻⁸ | 1.50×10 ⁻⁴ | 1.03×10 ⁻⁵ |
| 14 | 3.26×10 ⁻⁷ | 4.15×10 ⁻⁷ | 3.05×10 ⁻⁷ | 1.79×10 ⁻⁶ | 1.67×10 ⁻⁵ | 6.48×10 ⁻⁹ | 9.91×10 ⁻⁸ | 1.01×10 ⁻⁷ | 1.77×10 ⁻⁴ | 1.12×10 ⁻⁵ |
| 15 | 5.12×10 ⁻⁷ | 8.56×10 ⁻⁷ | 2.60×10 ⁻⁷ | 9.00×10 ⁻⁷ | 1.15×10 ⁻⁵ | 1.29×10 ⁻⁸ | 6.04×10 ⁻⁸ | 7.85×10 ⁻⁸ | 7.13×10 ⁻⁴ | 9.77×10 ⁻⁵ |
| 16 | 5.37×10 ⁻⁷ | 3.52×10 ⁻⁷ | 2.87×10 ⁻⁷ | 4.64×10 ⁻⁶ | 1.03×10 ⁻⁵ | 6.51×10 ⁻⁹ | 7.51×10 ⁻⁸ | 7.63×10 ⁻⁸ | 1.08×10 ⁻⁴ | 7.67×10 ⁻⁵ |
| 17 | 6.35×10 ⁻⁷ | 6.30×10 ⁻⁷ | 1.57×10 ⁻⁷ | 9.47×10 ⁻⁷ | 6.28×10 ⁻⁶ | 1.24×10 ⁻⁸ | 3.20×10 ⁻⁷ | 5.73×10 ⁻⁸ | 1.42×10 ⁻⁴ | 1.05×10 ⁻⁵ |
| 18 | 5.64×10 ⁻⁷ | 6.12×10 ⁻⁷ | 2.92×10 ⁻⁷ | 1.20×10 ⁻⁶ | 5.28×10 ⁻⁶ | 5.93×10 ⁻⁹ | 2.39×10 ⁻⁷ | 7.78×10 ⁻⁸ | 1.01×10 ⁻⁴ | 1.19×10 ⁻⁵ |
| 19 | 1.44×10 ⁻⁶ | 1.20×10 ⁻⁶ | 2.70×10 ⁻⁷ | 1.61×10 ⁻⁶ | 9.47×10 ⁻⁶ | 1.23×10 ⁻⁸ | 1.84×10 ⁻⁷ | 8.84×10 ⁻⁸ | 8.62×10 ⁻⁴ | 9.51×10 ⁻⁵ |
| 20 | 1.93×10 ⁻⁶ | 6.18×10 ⁻⁷ | 2.21×10 ⁻⁷ | 1.26×10 ⁻⁶ | 6.61×10 ⁻⁶ | 1.25×10 ⁻⁸ | 4.93×10 ⁻⁷ | 6.77×10 ⁻⁸ | 2.24×10 ⁻⁴ | 6.31×10 ⁻⁶ |
| 21 | 6.60×10 ⁻⁷ | 6.26×10 ⁻⁷ | 2.83×10 ⁻⁷ | 1.85×10 ⁻⁶ | 1.72×10 ⁻⁵ | 2.03×10 ⁻⁹ | 4.42×10 ⁻⁸ | 3.10×10 ⁻⁸ | 1.68×10 ⁻⁴ | 5.68×10 ⁻⁵ |
| 22 | 7.10×10 ⁻⁷ | 4.74×10 ⁻⁷ | 3.52×10 ⁻⁷ | 1.82×10 ⁻⁶ | 1.85×10 ⁻⁵ | 1.95×10 ⁻⁸ | 1.48×10 ⁻⁷ | 9.14×10 ⁻⁸ | 6.10×10 ⁻⁴ | 1.08×10 ⁻⁴ |
| 23 | 7.24×10 ⁻⁷ | 3.76×10 ⁻⁷ | 1.88×10 ⁻⁷ | 1.61×10 ⁻⁶ | 1.02×10 ⁻⁵ | 2.03×10 ⁻⁹ | 1.24×10 ⁻⁷ | 7.11×10 ⁻⁸ | 1.19×10 ⁻⁴ | 5.64×10 ⁻⁵ |
| 24 | 1.03×10 ⁻⁶ | 3.41×10 ⁻⁷ | 8.85×10 ⁻⁸ | 1.07×10 ⁻⁶ | 1.82×10 ⁻⁵ | 1.29×10 ⁻⁸ | 3.66×10 ⁻⁷ | 5.42×10 ⁻⁸ | 3.86×10 ⁻⁴ | 1.16×10 ⁻⁴ |
| 25 | 3.94×10 ⁻⁷ | 3.29×10 ⁻⁷ | 1.16×10 ⁻⁷ | 1.50×10 ⁻⁶ | 1.50×10 ⁻⁵ | 1.98×10 ⁻⁸ | 9.68×10 ⁻⁷ | 5.96×10 ⁻⁸ | 6.57×10 ⁻⁵ | 3.98×10 ⁻⁵ |
| 26 | 5.20×10 ⁻⁷ | 4.00×10 ⁻⁷ | 1.68×10 ⁻⁷ | 1.44×10 ⁻⁶ | 8.94×10 ⁻⁶ | 1.94×10 ⁻⁸ | 1.18×10 ⁻⁷ | 5.56×10 ⁻⁸ | 2.18×10 ⁻⁴ | 2.31×10 ⁻⁶ |
| 27 | 7.10×10 ⁻⁷ | 6.73×10 ⁻⁷ | 2.32×10 ⁻⁷ | 1.01×10 ⁻⁶ | 1.72×10 ⁻⁵ | 3.74×10 ⁻⁸ | 1.12×10 ⁻⁷ | 7.08×10 ⁻⁸ | 1.50×10 ⁻³ | 1.08×10 ⁻⁴ |
| 28 | 1.38×10 ⁻⁶ | 7.11×10 ⁻⁷ | 1.69×10 ⁻⁷ | 1.03×10 ⁻⁶ | 8.85×10 ⁻⁶ | 5.88×10 ⁻⁹ | 1.06×10 ⁻⁷ | 3.86×10 ⁻⁸ | 1.81×10 ⁻⁴ | 1.07×10 ⁻⁴ |
| 29 | 4.16×10 ⁻⁷ | 4.23×10 ⁻⁷ | 5.13×10 ⁻⁷ | 2.72×10 ⁻⁶ | 3.19×10 ⁻⁶ | 2.03×10 ⁻⁹ | 6.85×10 ⁻⁸ | 8.68×10 ⁻⁸ | 2.27×10 ⁻⁴ | 2.47×10 ⁻⁵ |
| 30 | 4.89×10 ⁻⁷ | 8.74×10 ⁻⁷ | 4.72×10 ⁻⁷ | 2.87×10 ⁻⁶ | 1.57×10 ⁻⁵ | 6.52×10 ⁻⁹ | 7.45×10 ⁻⁸ | 6.79×10 ⁻⁸ | 5.46×10 ⁻⁴ | 2.58×10 ⁻⁵ |
| 31 | 6.19×10 ⁻⁷ | 6.69×10 ⁻⁷ | 3.48×10 ⁻⁷ | 7.85×10 ⁻⁷ | 1.38×10 ⁻⁵ | 1.91×10 ⁻⁸ | 2.86×10 ⁻⁷ | 9.27×10 ⁻⁸ | 1.02×10 ⁻⁴ | 9.25×10 ⁻⁵ |
| 32 | 3.45×10 ⁻⁷ | 3.82×10 ⁻⁷ | 1.38×10 ⁻⁷ | 2.72×10 ⁻⁶ | 9.09×10 ⁻⁶ | 2.03×10 ⁻⁹ | 1.72×10 ⁻⁷ | 5.35×10 ⁻⁸ | 6.11×10 ⁻⁴ | 6.69×10 ⁻⁵ |
| 33 | 3.47×10 ⁻⁷ | 2.54×10 ⁻⁷ | 4.59×10 ⁻⁷ | 2.09×10 ⁻⁶ | 1.69×10 ⁻⁵ | 2.03×10 ⁻⁹ | 1.56×10 ⁻⁷ | 1.10×10 ⁻⁷ | 1.41×10 ⁻⁴ | 5.30×10 ⁻⁶ |
| 34 | 1.31×10 ⁻⁶ | 5.69×10 ⁻⁷ | 2.10×10 ⁻⁷ | 1.32×10 ⁻⁶ | 1.07×10 ⁻⁵ | 2.03×10 ⁻⁹ | 1.82×10 ⁻⁷ | 9.24×10 ⁻⁸ | 1.01×10 ⁻⁴ | 7.14×10 ⁻⁵ |
| 35 | 3.64×10 ⁻⁷ | 3.48×10 ⁻⁷ | 4.51×10 ⁻⁷ | 2.29×10 ⁻⁶ | 1.65×10 ⁻⁵ | 1.26×10 ⁻⁸ | 8.68×10 ⁻⁸ | 7.19×10 ⁻⁸ | 2.50×10 ⁻⁴ | 1.05×10 ⁻⁴ |
| 36 | 1.04×10 ⁻⁶ | 3.82×10 ⁻⁷ | 3.26×10 ⁻⁷ | 3.91×10 ⁻⁶ | 8.09×10 ⁻⁶ | 3.81×10 ⁻⁸ | 1.74×10 ⁻⁷ | 6.37×10 ⁻⁸ | 3.17×10 ⁻⁴ | 1.48×10 ⁻⁴ |
| 37 | 1.08×10 ⁻⁶ | 1.79×10 ⁻⁷ | 3.95×10 ⁻⁷ | 1.82×10 ⁻⁶ | 1.27×10 ⁻⁵ | 6.14×10 ⁻⁹ | 7.34×10 ⁻⁸ | 5.28×10 ⁻⁸ | 5.62×10 ⁻⁵ | 1.79×10 ⁻⁵ |
| 38 | 3.87×10 ⁻⁷ | 5.39×10 ⁻⁷ | 1.87×10 ⁻⁷ | 6.40×10 ⁻⁷ | 1.41×10 ⁻⁵ | 1.69×10 ⁻⁷ | 2.13×10 ⁻⁷ | 1.22×10 ⁻⁷ | 2.02×10 ⁻³ | 2.40×10 ⁻⁵ |

Table S6. Target hazard quotient (THQ) of five toxic elements in children (20kg).

| Sample numbers | Pb | | Hg | | Cd | | As | | Cu | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | He | Am | He | Am | He | Am | He | Am | He | Am |
| 1 | 1.53×10 ⁻⁶ | 1.41×10 ⁻⁶ | 1.14×10 ⁻⁷ | 7.72×10 ⁻⁷ | 9.71×10 ⁻⁴ | 1.29×10 ⁻⁶ | 8.48×10 ⁻⁵ | 2.47×10 ⁻⁵ | 2.29×10 ⁻⁴ | 2.43×10 ⁻⁴ |
| 2 | 4.75×10 ⁻⁶ | 1.16×10 ⁻⁶ | 1.23×10 ⁻⁷ | 5.23×10 ⁻⁷ | 3.71×10 ⁻⁴ | 6.31×10 ⁻⁷ | 1.81×10 ⁻⁴ | 3.12×10 ⁻⁵ | 1.32×10 ⁻⁴ | 1.56×10 ⁻⁴ |
| 3 | 2.06×10 ⁻⁶ | 3.41×10 ⁻⁶ | 2.75×10 ⁻⁷ | 2.47×10 ⁻⁶ | 4.55×10 ⁻⁴ | 2.00×10 ⁻⁷ | 1.54×10 ⁻⁵ | 3.24×10 ⁻⁵ | 6.03×10 ⁻⁴ | 2.46×10 ⁻⁴ |
| 4 | 3.59×10 ⁻⁶ | 1.02×10 ⁻⁶ | 2.58×10 ⁻⁷ | 2.04×10 ⁻⁶ | 2.71×10 ⁻³ | 6.03×10 ⁻⁷ | 4.53×10 ⁻⁵ | 1.74×10 ⁻⁵ | 4.63×10 ⁻⁴ | 7.98×10 ⁻⁵ |
| 5 | 1.01×10 ⁻⁶ | 2.33×10 ⁻⁶ | 1.05×10 ⁻⁷ | 1.09×10 ⁻⁶ | 5.40×10 ⁻⁴ | 6.37×10 ⁻⁷ | 2.46×10 ⁻⁵ | 2.85×10 ⁻⁵ | 1.70×10 ⁻⁴ | 2.15×10 ⁻⁴ |
| 6 | 2.22×10 ⁻⁶ | 1.76×10 ⁻⁶ | 1.20×10 ⁻⁷ | 8.34×10 ⁻⁷ | 5.02×10 ⁻⁴ | 6.18×10 ⁻⁷ | 2.41×10 ⁻⁵ | 2.43×10 ⁻⁵ | 1.33×10 ⁻⁴ | 4.57×10 ⁻⁵ |
| 7 | 2.73×10 ⁻⁶ | 2.13×10 ⁻⁶ | 2.32×10 ⁻⁷ | 2.92×10 ⁻⁶ | 1.04×10 ⁻³ | 1.77×10 ⁻⁶ | 2.52×10 ⁻⁵ | 1.99×10 ⁻⁵ | 1.56×10 ⁻³ | 1.65×10 ⁻⁵ |
| 8 | 3.56×10 ⁻⁶ | 2.54×10 ⁻⁶ | 2.96×10 ⁻⁷ | 2.49×10 ⁻⁶ | 6.10×10 ⁻⁴ | 2.00×10 ⁻⁷ | 3.03×10 ⁻⁵ | 1.90×10 ⁻⁵ | 2.39×10 ⁻⁴ | 3.32×10 ⁻⁵ |
| 9 | 3.28×10 ⁻⁶ | 3.48×10 ⁻⁶ | 5.78×10 ⁻⁷ | 1.86×10 ⁻⁶ | 8.68×10 ⁻⁴ | 1.91×10 ⁻⁶ | 4.69×10 ⁻⁵ | 4.14×10 ⁻⁵ | 8.20×10 ⁻⁴ | 2.79×10 ⁻⁴ |
| 10 | 1.01×10 ⁻⁶ | 2.04×10 ⁻⁶ | 2.82×10 ⁻⁷ | 6.28×10 ⁻⁷ | 2.11×10 ⁻³ | 3.15×10 ⁻⁶ | 1.86×10 ⁻⁵ | 2.52×10 ⁻⁵ | 2.31×10 ⁻⁴ | 7.11×10 ⁻⁵ |
| 11 | 2.06×10 ⁻⁶ | 2.16×10 ⁻⁶ | 3.50×10 ⁻⁷ | 1.78×10 ⁻⁶ | 1.55×10 ⁻³ | 6.14×10 ⁻⁷ | 2.62×10 ⁻⁵ | 1.78×10 ⁻⁵ | 1.51×10 ⁻³ | 1.92×10 ⁻⁵ |
| 12 | 2.04×10 ⁻⁶ | 1.27×10 ⁻⁶ | 3.10×10 ⁻⁷ | 1.73×10 ⁻⁶ | 6.76×10 ⁻⁴ | 6.18×10 ⁻⁷ | 4.11×10 ⁻⁵ | 1.83×10 ⁻⁵ | 5.40×10 ⁻⁴ | 2.08×10 ⁻⁴ |
| 13 | 2.43×10 ⁻⁶ | 2.34×10 ⁻⁶ | 4.99×10 ⁻⁷ | 2.81×10 ⁻⁶ | 1.56×10 ⁻³ | 7.69×10 ⁻⁶ | 2.25×10 ⁻⁵ | 2.00×10 ⁻⁵ | 3.69×10 ⁻⁴ | 2.54×10 ⁻⁵ |
| 14 | 1.61×10 ⁻⁶ | 2.04×10 ⁻⁶ | 3.00×10 ⁻⁷ | 1.76×10 ⁻⁶ | 1.65×10 ⁻³ | 6.39×10 ⁻⁷ | 3.26×10 ⁻⁵ | 3.33×10 ⁻⁵ | 4.36×10 ⁻⁴ | 2.76×10 ⁻⁵ |
| 15 | 2.52×10 ⁻⁶ | 4.22×10 ⁻⁶ | 2.56×10 ⁻⁷ | 8.88×10 ⁻⁷ | 1.14×10 ⁻³ | 1.27×10 ⁻⁶ | 1.99×10 ⁻⁵ | 2.58×10 ⁻⁵ | 1.76×10 ⁻³ | 2.41×10 ⁻⁴ |
| 16 | 2.65×10 ⁻⁶ | 1.73×10 ⁻⁶ | 2.83×10 ⁻⁷ | 4.58×10 ⁻⁶ | 1.01×10 ⁻³ | 6.42×10 ⁻⁷ | 2.47×10 ⁻⁵ | 2.51×10 ⁻⁵ | 2.67×10 ⁻⁴ | 1.89×10 ⁻⁴ |
| 17 | 3.13×10 ⁻⁶ | 3.11×10 ⁻⁶ | 1.55×10 ⁻⁷ | 9.34×10 ⁻⁷ | 6.19×10 ⁻⁴ | 1.22×10 ⁻⁶ | 1.05×10 ⁻⁴ | 1.88×10 ⁻⁵ | 3.50×10 ⁻⁴ | 2.60×10 ⁻⁵ |
| 18 | 2.78×10 ⁻⁶ | 3.02×10 ⁻⁶ | 2.88×10 ⁻⁷ | 1.18×10 ⁻⁶ | 5.21×10 ⁻⁴ | 5.85×10 ⁻⁷ | 7.85×10 ⁻⁵ | 2.56×10 ⁻⁵ | 2.49×10 ⁻⁴ | 2.95×10 ⁻⁵ |
| 19 | 7.12×10 ⁻⁶ | 5.92×10 ⁻⁶ | 2.67×10 ⁻⁷ | 1.59×10 ⁻⁶ | 9.34×10 ⁻⁴ | 1.22×10 ⁻⁶ | 6.06×10 ⁻⁵ | 2.91×10 ⁻⁵ | 2.12×10 ⁻³ | 2.34×10 ⁻⁴ |
| 20 | 9.51×10 ⁻⁶ | 3.05×10 ⁻⁶ | 2.18×10 ⁻⁷ | 1.24×10 ⁻⁶ | 6.52×10 ⁻⁴ | 1.23×10 ⁻⁶ | 1.62×10 ⁻⁴ | 2.23×10 ⁻⁵ | 5.52×10 ⁻⁴ | 1.56×10 ⁻⁵ |
| 21 | 3.26×10 ⁻⁶ | 3.09×10 ⁻⁶ | 2.79×10 ⁻⁷ | 1.82×10 ⁻⁶ | 1.69×10 ⁻³ | 2.00×10 ⁻⁷ | 1.45×10 ⁻⁵ | 1.02×10 ⁻⁵ | 4.15×10 ⁻⁴ | 1.40×10 ⁻⁴ |
| 22 | 3.50×10 ⁻⁶ | 2.34×10 ⁻⁶ | 3.47×10 ⁻⁷ | 1.79×10 ⁻⁶ | 1.83×10 ⁻³ | 1.92×10 ⁻⁶ | 4.85×10 ⁻⁵ | 3.01×10 ⁻⁵ | 1.50×10 ⁻³ | 2.65×10 ⁻⁴ |
| 23 | 3.57×10 ⁻⁶ | 1.85×10 ⁻⁶ | 1.86×10 ⁻⁷ | 1.58×10 ⁻⁶ | 1.01×10 ⁻³ | 2.00×10 ⁻⁷ | 4.07×10 ⁻⁵ | 2.34×10 ⁻⁵ | 2.93×10 ⁻⁴ | 1.39×10 ⁻⁴ |
| 24 | 5.06×10 ⁻⁶ | 1.68×10 ⁻⁶ | 8.73×10 ⁻⁸ | 1.05×10 ⁻⁶ | 1.79×10 ⁻³ | 1.27×10 ⁻⁶ | 1.20×10 ⁻⁴ | 1.78×10 ⁻⁵ | 9.52×10 ⁻⁴ | 2.87×10 ⁻⁴ |
| 25 | 1.94×10 ⁻⁶ | 1.62×10 ⁻⁶ | 1.15×10 ⁻⁷ | 1.48×10 ⁻⁶ | 1.48×10 ⁻³ | 1.95×10 ⁻⁶ | 3.18×10 ⁻⁴ | 1.96×10 ⁻⁵ | 1.62×10 ⁻⁴ | 9.81×10 ⁻⁵ |
| 26 | 2.56×10 ⁻⁶ | 1.97×10 ⁻⁶ | 1.66×10 ⁻⁷ | 1.42×10 ⁻⁶ | 8.82×10 ⁻⁴ | 1.91×10 ⁻⁶ | 3.88×10 ⁻⁵ | 1.83×10 ⁻⁵ | 5.38×10 ⁻⁴ | 5.69×10 ⁻⁶ |
| 27 | 3.50×10 ⁻⁶ | 3.32×10 ⁻⁶ | 2.29×10 ⁻⁷ | 1.00×10 ⁻⁶ | 1.70×10 ⁻³ | 3.68×10 ⁻⁶ | 3.67×10 ⁻⁵ | 2.33×10 ⁻⁵ | 3.69×10 ⁻³ | 2.67×10 ⁻⁴ |
| 28 | 6.80×10 ⁻⁶ | 3.51×10 ⁻⁶ | 1.67×10 ⁻⁷ | 1.02×10 ⁻⁶ | 8.73×10 ⁻⁴ | 5.80×10 ⁻⁷ | 3.49×10 ⁻⁵ | 1.27×10 ⁻⁵ | 4.47×10 ⁻⁴ | 2.64×10 ⁻⁴ |
| 29 | 2.05×10 ⁻⁶ | 2.09×10 ⁻⁶ | 5.06×10 ⁻⁷ | 2.68×10 ⁻⁶ | 3.14×10 ⁻⁴ | 2.00×10 ⁻⁷ | 2.25×10 ⁻⁵ | 2.86×10 ⁻⁵ | 5.60×10 ⁻⁴ | 6.10×10 ⁻⁵ |
| 30 | 2.41×10 ⁻⁶ | 4.31×10 ⁻⁶ | 4.66×10 ⁻⁷ | 2.83×10 ⁻⁶ | 1.55×10 ⁻³ | 6.43×10 ⁻⁷ | 2.45×10 ⁻⁵ | 2.23×10 ⁻⁵ | 1.35×10 ⁻³ | 6.37×10 ⁻⁵ |
| 31 | 3.05×10 ⁻⁶ | 3.30×10 ⁻⁶ | 3.44×10 ⁻⁷ | 7.74×10 ⁻⁷ | 1.36×10 ⁻³ | 1.89×10 ⁻⁶ | 9.41×10 ⁻⁵ | 3.05×10 ⁻⁵ | 2.51×10 ⁻⁴ | 2.28×10 ⁻⁴ |
| 32 | 1.70×10 ⁻⁶ | 1.88×10 ⁻⁶ | 1.36×10 ⁻⁷ | 2.68×10 ⁻⁶ | 8.96×10 ⁻⁴ | 2.00×10 ⁻⁷ | 5.66×10 ⁻⁵ | 1.76×10 ⁻⁵ | 1.51×10 ⁻³ | 1.65×10 ⁻⁴ |
| 33 | 1.71×10 ⁻⁶ | 1.25×10 ⁻⁶ | 4.52×10 ⁻⁷ | 2.06×10 ⁻⁶ | 1.67×10 ⁻³ | 2.00×10 ⁻⁷ | 5.13×10 ⁻⁵ | 3.63×10 ⁻⁵ | 3.47×10 ⁻⁴ | 1.31×10 ⁻⁵ |
| 34 | 6.47×10 ⁻⁶ | 2.81×10 ⁻⁶ | 2.07×10 ⁻⁷ | 1.31×10 ⁻⁶ | 1.05×10 ⁻³ | 2.00×10 ⁻⁷ | 6.00×10 ⁻⁵ | 3.04×10 ⁻⁵ | 2.48×10 ⁻⁴ | 1.76×10 ⁻⁴ |
| 35 | 1.79×10 ⁻⁶ | 1.71×10 ⁻⁶ | 4.45×10 ⁻⁷ | 2.26×10 ⁻⁶ | 1.62×10 ⁻³ | 1.25×10 ⁻⁶ | 2.85×10 ⁻⁵ | 2.37×10 ⁻⁵ | 6.17×10 ⁻⁴ | 2.58×10 ⁻⁴ |
| 36 | 5.13×10 ⁻⁶ | 1.88×10 ⁻⁶ | 3.22×10 ⁻⁷ | 3.86×10 ⁻⁶ | 7.98×10 ⁻⁴ | 3.76×10 ⁻⁶ | 5.72×10 ⁻⁵ | 2.09×10 ⁻⁵ | 7.82×10 ⁻⁴ | 3.64×10 ⁻⁴ |
| 37 | 5.30×10 ⁻⁶ | 8.82×10 ⁻⁷ | 3.89×10 ⁻⁷ | 1.80×10 ⁻⁶ | 1.26×10 ⁻³ | 6.05×10 ⁻⁷ | 2.41×10 ⁻⁵ | 1.74×10 ⁻⁵ | 1.39×10 ⁻⁴ | 4.41×10 ⁻⁵ |
| 38 | 1.91×10 ⁻⁶ | 2.66×10 ⁻⁶ | 1.85×10 ⁻⁷ | 6.32×10 ⁻⁷ | 1.39×10 ⁻³ | 1.67×10 ⁻⁵ | 7.00×10 ⁻⁵ | 4.02×10 ⁻⁵ | 4.99×10 ⁻³ | 5.92×10 ⁻⁵ |

Table S7. Target hazard quotient (THQ) of five toxic elements in adults (70kg).

| Sample numbers | Pb | | Hg | | Cd | | As | | Cu | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | He | Am | He | Am | He | Am | He | Am | He | Am |
| 1 | 5.70×10 ⁻⁶ | 5.25×10 ⁻⁶ | 4.22×10 ⁻⁷ | 2.87×10 ⁻⁶ | 3.61×10 ⁻³ | 4.77×10 ⁻⁶ | 3.15×10 ⁻⁴ | 9.18×10 ⁻⁵ | 8.50×10 ⁻⁴ | 9.03×10 ⁻⁴ |
| 2 | 1.76×10 ⁻⁵ | 4.32×10 ⁻⁶ | 4.57×10 ⁻⁷ | 1.94×10 ⁻⁶ | 1.38×10 ⁻³ | 2.34×10 ⁻⁶ | 6.74×10 ⁻⁴ | 1.16×10 ⁻⁴ | 4.91×10 ⁻⁴ | 5.78×10 ⁻⁴ |
| 3 | 7.63×10 ⁻⁶ | 1.27×10 ⁻⁵ | 1.02×10 ⁻⁶ | 9.18×10 ⁻⁶ | 1.69×10 ⁻³ | 7.45×10 ⁻⁷ | 5.71×10 ⁻⁵ | 1.20×10 ⁻⁴ | 2.24×10 ⁻³ | 9.15×10 ⁻⁴ |
| 4 | 1.34×10 ⁻⁵ | 3.80×10 ⁻⁶ | 9.59×10 ⁻⁷ | 7.57×10 ⁻⁶ | 1.01×10 ⁻² | 2.24×10 ⁻⁶ | 1.68×10 ⁻⁴ | 6.46×10 ⁻⁵ | 1.72×10 ⁻³ | 2.97×10 ⁻⁴ |
| 5 | 3.76×10 ⁻⁶ | 8.64×10 ⁻⁶ | 3.90×10 ⁻⁷ | 4.04×10 ⁻⁶ | 2.00×10 ⁻³ | 2.37×10 ⁻⁶ | 9.14×10 ⁻⁵ | 1.06×10 ⁻⁴ | 6.33×10 ⁻⁴ | 8.00×10 ⁻⁴ |
| 6 | 8.26×10 ⁻⁶ | 6.55×10 ⁻⁶ | 4.46×10 ⁻⁷ | 3.10×10 ⁻⁶ | 1.87×10 ⁻³ | 2.30×10 ⁻⁶ | 8.94×10 ⁻⁵ | 9.04×10 ⁻⁵ | 4.95×10 ⁻⁴ | 1.70×10 ⁻⁴ |
| 7 | 1.01×10 ⁻⁵ | 7.89×10 ⁻⁶ | 8.61×10 ⁻⁷ | 1.08×10 ⁻⁵ | 3.87×10 ⁻³ | 6.59×10 ⁻⁶ | 9.34×10 ⁻⁵ | 7.40×10 ⁻⁵ | 5.80×10 ⁻³ | 6.12×10 ⁻⁵ |
| 8 | 1.32×10 ⁻⁵ | 9.42×10 ⁻⁶ | 1.10×10 ⁻⁶ | 9.25×10 ⁻⁶ | 2.27×10 ⁻³ | 7.45×10 ⁻⁷ | 1.13×10 ⁻⁴ | 7.07×10 ⁻⁵ | 8.86×10 ⁻⁴ | 1.23×10 ⁻⁴ |
| 9 | 1.22×10 ⁻⁵ | 1.29×10 ⁻⁵ | 2.15×10 ⁻⁶ | 6.92×10 ⁻⁶ | 3.22×10 ⁻³ | 7.11×10 ⁻⁶ | 1.74×10 ⁻⁴ | 1.54×10 ⁻⁴ | 3.05×10 ⁻³ | 1.04×10 ⁻³ |
| 10 | 3.75×10 ⁻⁶ | 7.60×10 ⁻⁶ | 1.05×10 ⁻⁶ | 2.33×10 ⁻⁶ | 7.83×10 ⁻³ | 1.17×10 ⁻⁵ | 6.90×10 ⁻⁵ | 9.35×10 ⁻⁵ | 8.56×10 ⁻⁴ | 2.64×10 ⁻⁴ |
| 11 | 7.67×10 ⁻⁶ | 8.01×10 ⁻⁶ | 1.30×10 ⁻⁶ | 6.62×10 ⁻⁶ | 5.75×10 ⁻³ | 2.28×10 ⁻⁶ | 9.75×10 ⁻⁵ | 6.60×10 ⁻⁵ | 5.60×10 ⁻³ | 7.14×10 ⁻⁵ |
| 12 | 7.56×10 ⁻⁶ | 4.73×10 ⁻⁶ | 1.15×10 ⁻⁶ | 6.43×10 ⁻⁶ | 2.51×10 ⁻³ | 2.30×10 ⁻⁶ | 1.53×10 ⁻⁴ | 6.79×10 ⁻⁵ | 2.00×10 ⁻³ | 7.72×10 ⁻⁴ |
| 13 | 9.01×10 ⁻⁶ | 8.68×10 ⁻⁶ | 1.85×10 ⁻⁶ | 1.04×10 ⁻⁵ | 5.80×10 ⁻³ | 2.85×10 ⁻⁵ | 8.36×10 ⁻⁵ | 7.43×10 ⁻⁵ | 1.37×10 ⁻³ | 9.42×10 ⁻⁵ |
| 14 | 5.98×10 ⁻⁶ | 7.60×10 ⁻⁶ | 1.12×10 ⁻⁶ | 6.55×10 ⁻⁶ | 6.14×10 ⁻³ | 2.37×10 ⁻⁶ | 1.21×10 ⁻⁴ | 1.24×10 ⁻⁴ | 1.62×10 ⁻³ | 1.02×10 ⁻⁴ |
| 15 | 9.38×10 ⁻⁶ | 1.57×10 ⁻⁵ | 9.52×10 ⁻⁷ | 3.30×10 ⁻⁶ | 4.22×10 ⁻³ | 4.72×10 ⁻⁶ | 7.37×10 ⁻⁵ | 9.58×10 ⁻⁵ | 6.53×10 ⁻³ | 8.95×10 ⁻⁴ |
| 16 | 9.83×10 ⁻⁶ | 6.44×10 ⁻⁶ | 1.05×10 ⁻⁶ | 1.70×10 ⁻⁵ | 3.76×10 ⁻³ | 2.38×10 ⁻⁶ | 9.17×10 ⁻⁵ | 9.32×10 ⁻⁵ | 9.92×10 ⁻⁴ | 7.03×10 ⁻⁴ |
| 17 | 1.16×10 ⁻⁵ | 1.15×10 ⁻⁵ | 5.75×10 ⁻⁷ | 3.47×10 ⁻⁶ | 2.30×10 ⁻³ | 4.53×10 ⁻⁶ | 3.91×10 ⁻⁴ | 6.99×10 ⁻⁵ | 1.30×10 ⁻³ | 9.64×10 ⁻⁵ |
| 18 | 1.03×10 ⁻⁵ | 1.12×10 ⁻⁵ | 1.07×10 ⁻⁶ | 4.39×10 ⁻⁶ | 1.93×10 ⁻³ | 2.17×10 ⁻⁶ | 2.92×10 ⁻⁴ | 9.50×10 ⁻⁵ | 9.25×10 ⁻⁴ | 1.09×10 ⁻⁴ |
| 19 | 2.65×10 ⁻⁵ | 2.20×10 ⁻⁵ | 9.90×10 ⁻⁷ | 5.91×10 ⁻⁶ | 3.47×10 ⁻³ | 4.51×10 ⁻⁶ | 2.25×10 ⁻⁴ | 1.08×10 ⁻⁴ | 7.89×10 ⁻³ | 8.71×10 ⁻⁴ |
| 20 | 3.53×10 ⁻⁵ | 1.13×10 ⁻⁵ | 8.09×10 ⁻⁷ | 4.60×10 ⁻⁶ | 2.42×10 ⁻³ | 4.58×10 ⁻⁶ | 6.02×10 ⁻⁴ | 8.27×10 ⁻⁵ | 2.05×10 ⁻³ | 5.78×10 ⁻⁵ |
| 21 | 1.21×10 ⁻⁵ | 1.15×10 ⁻⁵ | 1.04×10 ⁻⁶ | 6.78×10 ⁻⁶ | 6.29×10 ⁻³ | 7.45×10 ⁻⁷ | 5.40×10 ⁻⁵ | 3.78×10 ⁻⁵ | 1.54×10 ⁻³ | 5.20×10 ⁻⁴ |
| 22 | 1.30×10 ⁻⁵ | 8.68×10 ⁻⁶ | 1.29×10 ⁻⁶ | 6.66×10 ⁻⁶ | 6.78×10 ⁻³ | 7.14×10 ⁻⁶ | 1.80×10 ⁻⁴ | 1.12×10 ⁻⁴ | 5.58×10 ⁻³ | 9.85×10 ⁻⁴ |
| 23 | 1.33×10 ⁻⁵ | 6.89×10 ⁻⁶ | 6.90×10 ⁻⁷ | 5.88×10 ⁻⁶ | 3.75×10 ⁻³ | 7.45×10 ⁻⁷ | 1.51×10 ⁻⁴ | 8.68×10 ⁻⁵ | 1.09×10 ⁻³ | 5.16×10 ⁻⁴ |
| 24 | 1.88×10 ⁻⁵ | 6.26×10 ⁻⁶ | 3.24×10 ⁻⁷ | 3.92×10 ⁻⁶ | 6.66×10 ⁻³ | 4.72×10 ⁻⁶ | 4.47×10 ⁻⁴ | 6.61×10 ⁻⁵ | 3.54×10 ⁻³ | 1.06×10 ⁻³ |
| 25 | 7.22×10 ⁻⁶ | 6.03×10 ⁻⁶ | 4.25×10 ⁻⁷ | 5.51×10 ⁻⁶ | 5.49×10 ⁻³ | 7.25×10 ⁻⁶ | 1.18×10 ⁻³ | 7.27×10 ⁻⁵ | 6.02×10 ⁻⁴ | 3.64×10 ⁻⁴ |
| 26 | 9.52×10 ⁻⁶ | 7.33×10 ⁻⁶ | 6.17×10 ⁻⁷ | 5.28×10 ⁻⁶ | 3.28×10 ⁻³ | 7.10×10 ⁻⁶ | 1.44×10 ⁻⁴ | 6.78×10 ⁻⁵ | 2.00×10 ⁻³ | 2.11×10 ⁻⁵ |
| 27 | 1.30×10 ⁻⁵ | 1.23×10 ⁻⁵ | 8.51×10 ⁻⁷ | 3.72×10 ⁻⁶ | 6.31×10 ⁻³ | 1.37×10 ⁻⁵ | 1.36×10 ⁻⁴ | 8.65×10 ⁻⁵ | 1.37×10 ⁻² | 9.90×10 ⁻⁴ |
| 28 | 2.52×10 ⁻⁵ | 1.30×10 ⁻⁵ | 6.21×10 ⁻⁷ | 3.79×10 ⁻⁶ | 3.24×10 ⁻³ | 2.15×10 ⁻⁶ | 1.30×10 ⁻⁴ | 4.71×10 ⁻⁵ | 1.66×10 ⁻³ | 9.79×10 ⁻⁴ |
| 29 | 7.62×10 ⁻⁶ | 7.74×10 ⁻⁶ | 1.88×10 ⁻⁶ | 9.96×10 ⁻⁶ | 1.17×10 ⁻³ | 7.45×10 ⁻⁷ | 8.36×10 ⁻⁵ | 1.06×10 ⁻⁴ | 2.08×10 ⁻³ | 2.26×10 ⁻⁴ |
| 30 | 8.96×10 ⁻⁶ | 1.60×10 ⁻⁵ | 1.73×10 ⁻⁶ | 1.05×10 ⁻⁵ | 5.77×10 ⁻³ | 2.39×10 ⁻⁶ | 9.10×10 ⁻⁵ | 8.29×10 ⁻⁵ | 5.00×10 ⁻³ | 2.37×10 ⁻⁴ |
| 31 | 1.13×10 ⁻⁵ | 1.22×10 ⁻⁵ | 1.28×10 ⁻⁶ | 2.87×10 ⁻⁶ | 5.05×10 ⁻³ | 7.00×10 ⁻⁶ | 3.50×10 ⁻⁴ | 1.13×10 ⁻⁴ | 9.33×10 ⁻⁴ | 8.48×10 ⁻⁴ |
| 32 | 6.33×10 ⁻⁶ | 7.00×10 ⁻⁶ | 5.05×10 ⁻⁷ | 9.97×10 ⁻⁶ | 3.33×10 ⁻³ | 7.45×10 ⁻⁷ | 2.10×10 ⁻⁴ | 6.54×10 ⁻⁵ | 5.59×10 ⁻³ | 6.13×10 ⁻⁴ |
| 33 | 6.36×10 ⁻⁶ | 4.65×10 ⁻⁶ | 1.68×10 ⁻⁶ | 7.66×10 ⁻⁶ | 6.19×10 ⁻³ | 7.45×10 ⁻⁷ | 1.90×10 ⁻⁴ | 1.35×10 ⁻⁴ | 1.29×10 ⁻³ | 4.85×10 ⁻⁵ |
| 34 | 2.40×10 ⁻⁵ | 1.04×10 ⁻⁵ | 7.70×10 ⁻⁷ | 4.85×10 ⁻⁶ | 3.90×10 ⁻³ | 7.45×10 ⁻⁷ | 2.23×10 ⁻⁴ | 1.13×10 ⁻⁴ | 9.21×10 ⁻⁴ | 6.54×10 ⁻⁴ |
| 35 | 6.66×10 ⁻⁶ | 6.37×10 ⁻⁶ | 1.65×10 ⁻⁶ | 8.41×10 ⁻⁶ | 6.03×10 ⁻³ | 4.63×10 ⁻⁶ | 1.06×10 ⁻⁴ | 8.79×10 ⁻⁵ | 2.29×10 ⁻³ | 9.58×10 ⁻⁴ |
| 36 | 1.91×10 ⁻⁵ | 7.00×10 ⁻⁶ | 1.20×10 ⁻⁶ | 1.43×10 ⁻⁵ | 2.96×10 ⁻³ | 1.40×10 ⁻⁵ | 2.12×10 ⁻⁴ | 7.78×10 ⁻⁵ | 2.91×10 ⁻³ | 1.35×10 ⁻³ |
| 37 | 1.97×10 ⁻⁵ | 3.28×10 ⁻⁶ | 1.45×10 ⁻⁶ | 6.68×10 ⁻⁶ | 4.66×10 ⁻³ | 2.25×10 ⁻⁶ | 8.96×10 ⁻⁵ | 6.45×10 ⁻⁵ | 5.15×10 ⁻⁴ | 1.64×10 ⁻⁴ |
| 38 | 7.09×10 ⁻⁶ | 9.87×10 ⁻⁶ | 6.87×10 ⁻⁷ | 2.35×10 ⁻⁶ | 5.18×10 ⁻³ | 6.20×10 ⁻⁵ | 2.60×10 ⁻⁴ | 1.49×10 ⁻⁴ | 1.85×10 ⁻² | 2.20×10 ⁻⁴ |

Table S8. Cancer risk (CR) estimate of As and Pb in children (20Kg) and adults (70Kg).

| Sample numbers | As | | | | Pb | | | |
|----------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|
| | Children | | Adults | | Children | | Adults | |
| | He | Am | He | Am | He | Am | He | Am |
| 1 | 3.03×10^{-7} | 1.11×10^{-8} | 1.42×10^{-7} | 4.13×10^{-8} | 2.07×10^{-9} | 2.40×10^{-10} | 9.69×10^{-10} | 8.92×10^{-10} |
| 2 | 6.48×10^{-7} | 1.40×10^{-8} | 3.03×10^{-7} | 5.22×10^{-8} | 6.41×10^{-9} | 1.98×10^{-10} | 3.00×10^{-9} | 7.34×10^{-10} |
| 3 | 5.49×10^{-8} | 1.46×10^{-8} | 2.57×10^{-8} | 5.41×10^{-8} | 2.77×10^{-9} | 5.79×10^{-10} | 1.30×10^{-9} | 2.15×10^{-9} |
| 4 | 1.62×10^{-7} | 7.82×10^{-9} | 7.56×10^{-8} | 2.91×10^{-8} | 4.85×10^{-9} | 1.74×10^{-10} | 2.27×10^{-9} | 6.46×10^{-10} |
| 5 | 8.79×10^{-8} | 1.28×10^{-8} | 4.11×10^{-8} | 4.76×10^{-8} | 1.37×10^{-9} | 3.95×10^{-10} | 6.40×10^{-10} | 1.47×10^{-9} |
| 6 | 8.60×10^{-8} | 1.09×10^{-8} | 4.02×10^{-8} | 4.07×10^{-8} | 3.00×10^{-9} | 3.00×10^{-10} | 1.40×10^{-9} | 1.11×10^{-9} |
| 7 | 8.98×10^{-8} | 8.97×10^{-9} | 4.21×10^{-8} | 3.33×10^{-8} | 3.68×10^{-9} | 3.61×10^{-10} | 1.72×10^{-9} | 1.34×10^{-9} |
| 8 | 1.08×10^{-7} | 8.57×10^{-9} | 5.07×10^{-8} | 3.18×10^{-8} | 4.80×10^{-9} | 4.31×10^{-10} | 2.25×10^{-9} | 1.60×10^{-9} |
| 9 | 1.68×10^{-7} | 1.86×10^{-8} | 7.85×10^{-8} | 6.92×10^{-8} | 4.43×10^{-9} | 5.91×10^{-10} | 2.07×10^{-9} | 2.20×10^{-9} |
| 10 | 6.63×10^{-8} | 1.13×10^{-8} | 3.11×10^{-8} | 4.21×10^{-8} | 1.36×10^{-9} | 3.48×10^{-10} | 6.37×10^{-10} | 1.29×10^{-9} |
| 11 | 9.37×10^{-8} | 8.00×10^{-9} | 4.39×10^{-8} | 2.97×10^{-8} | 2.79×10^{-9} | 3.66×10^{-10} | 1.30×10^{-9} | 1.36×10^{-9} |
| 12 | 1.47×10^{-7} | 8.23×10^{-9} | 6.88×10^{-8} | 3.06×10^{-8} | 2.75×10^{-9} | 2.16×10^{-10} | 1.29×10^{-9} | 8.04×10^{-10} |
| 13 | 8.04×10^{-8} | 9.00×10^{-9} | 3.76×10^{-8} | 3.34×10^{-8} | 3.27×10^{-9} | 3.97×10^{-10} | 1.53×10^{-9} | 1.47×10^{-9} |
| 14 | 1.16×10^{-7} | 1.50×10^{-8} | 5.45×10^{-8} | 5.56×10^{-8} | 2.17×10^{-9} | 3.48×10^{-10} | 1.02×10^{-9} | 1.29×10^{-9} |
| 15 | 7.09×10^{-8} | 1.16×10^{-8} | 3.32×10^{-8} | 4.31×10^{-8} | 3.41×10^{-9} | 7.17×10^{-10} | 1.59×10^{-9} | 2.66×10^{-9} |
| 16 | 8.81×10^{-8} | 1.13×10^{-8} | 4.12×10^{-8} | 4.19×10^{-8} | 3.57×10^{-9} | 2.95×10^{-10} | 1.67×10^{-9} | 1.10×10^{-9} |
| 17 | 3.75×10^{-7} | 8.47×10^{-9} | 1.76×10^{-7} | 3.15×10^{-8} | 4.22×10^{-9} | 5.28×10^{-10} | 1.98×10^{-9} | 1.96×10^{-9} |
| 18 | 2.80×10^{-7} | 1.15×10^{-8} | 1.31×10^{-7} | 4.27×10^{-8} | 3.75×10^{-9} | 5.13×10^{-10} | 1.76×10^{-9} | 1.91×10^{-9} |
| 19 | 2.16×10^{-7} | 1.31×10^{-8} | 1.01×10^{-7} | 4.86×10^{-8} | 9.61×10^{-9} | 1.01×10^{-9} | 4.50×10^{-9} | 3.74×10^{-9} |
| 20 | 5.79×10^{-7} | 1.00×10^{-8} | 2.71×10^{-7} | 3.72×10^{-8} | 1.28×10^{-8} | 5.18×10^{-10} | 6.01×10^{-9} | 1.92×10^{-9} |
| 21 | 5.19×10^{-8} | 4.59×10^{-9} | 2.43×10^{-8} | 1.70×10^{-8} | 4.39×10^{-9} | 5.25×10^{-10} | 2.06×10^{-9} | 1.95×10^{-9} |
| 22 | 1.73×10^{-7} | 1.35×10^{-8} | 8.11×10^{-8} | 5.02×10^{-8} | 4.72×10^{-9} | 3.97×10^{-10} | 2.21×10^{-9} | 1.47×10^{-9} |
| 23 | 1.45×10^{-7} | 1.05×10^{-8} | 6.80×10^{-8} | 3.90×10^{-8} | 4.82×10^{-9} | 3.15×10^{-10} | 2.25×10^{-9} | 1.17×10^{-9} |
| 24 | 4.29×10^{-7} | 8.01×10^{-9} | 2.01×10^{-7} | 2.98×10^{-8} | 6.82×10^{-9} | 2.86×10^{-10} | 3.19×10^{-9} | 1.06×10^{-9} |
| 25 | 1.14×10^{-6} | 8.81×10^{-9} | 5.32×10^{-7} | 3.27×10^{-8} | 2.62×10^{-9} | 2.76×10^{-10} | 1.23×10^{-9} | 1.03×10^{-9} |
| 26 | 1.39×10^{-7} | 8.22×10^{-9} | 6.48×10^{-8} | 3.05×10^{-8} | 3.46×10^{-9} | 3.36×10^{-10} | 1.62×10^{-9} | 1.25×10^{-9} |
| 27 | 1.31×10^{-7} | 1.05×10^{-8} | 6.13×10^{-8} | 3.89×10^{-8} | 4.72×10^{-9} | 5.64×10^{-10} | 2.21×10^{-9} | 2.10×10^{-9} |
| 28 | 1.25×10^{-7} | 5.70×10^{-9} | 5.83×10^{-8} | 2.12×10^{-8} | 9.17×10^{-9} | 5.96×10^{-10} | 4.29×10^{-9} | 2.22×10^{-9} |
| 29 | 8.04×10^{-8} | 1.28×10^{-8} | 3.76×10^{-8} | 4.77×10^{-8} | 2.77×10^{-9} | 3.54×10^{-10} | 1.29×10^{-9} | 1.32×10^{-9} |
| 30 | 8.75×10^{-8} | 1.00×10^{-8} | 4.09×10^{-8} | 3.73×10^{-8} | 3.25×10^{-9} | 7.33×10^{-10} | 1.52×10^{-9} | 2.72×10^{-9} |
| 31 | 3.36×10^{-7} | 1.37×10^{-8} | 1.57×10^{-7} | 5.09×10^{-8} | 4.12×10^{-9} | 5.61×10^{-10} | 1.93×10^{-9} | 2.08×10^{-9} |
| 32 | 2.02×10^{-7} | 7.92×10^{-9} | 9.46×10^{-8} | 2.94×10^{-8} | 2.30×10^{-9} | 3.20×10^{-10} | 1.08×10^{-9} | 1.19×10^{-9} |
| 33 | 1.83×10^{-7} | 1.63×10^{-8} | 8.57×10^{-8} | 6.06×10^{-8} | 2.31×10^{-9} | 2.13×10^{-10} | 1.08×10^{-9} | 7.91×10^{-10} |
| 34 | 2.14×10^{-7} | 1.37×10^{-8} | 1.00×10^{-7} | 5.08×10^{-8} | 8.72×10^{-9} | 4.77×10^{-10} | 4.08×10^{-9} | 1.77×10^{-9} |
| 35 | 1.02×10^{-7} | 1.06×10^{-8} | 4.77×10^{-8} | 3.95×10^{-8} | 2.42×10^{-9} | 2.91×10^{-10} | 1.13×10^{-9} | 1.08×10^{-9} |
| 36 | 2.04×10^{-7} | 9.42×10^{-9} | 9.56×10^{-8} | 3.50×10^{-8} | 6.92×10^{-9} | 3.20×10^{-10} | 3.24×10^{-9} | 1.19×10^{-9} |
| 37 | 8.62×10^{-8} | 7.81×10^{-9} | 4.03×10^{-8} | 2.90×10^{-8} | 7.15×10^{-9} | 1.50×10^{-10} | 3.35×10^{-9} | 5.57×10^{-10} |
| 38 | 2.50×10^{-7} | 1.81×10^{-8} | 1.17×10^{-7} | 6.71×10^{-8} | 2.58×10^{-9} | 4.52×10^{-10} | 1.21×10^{-9} | 1.68×10^{-9} |

Table S9. Correlation coefficients among four toxic elements in the same tissues collected from red swamp crayfish (*Procambarus clarkii*).

| | Gi | | | | He | | | | Am | | | | Hc | | | |
|-----------|-------|----------------|---------------|---------------|---------------|-------|-------|-------|-------|-------|-------|-------|----|-------|-------|-------|
| | As | Pb | Cd | Cu | As | Pb | Cd | Cu | As | Pb | Cd | Cu | Hg | As | Pb | Cd |
| Hg | 0.012 | 0.002 | 0.175 | 0.145 | -.400* | -.132 | 0.181 | -.040 | -.144 | -.116 | -.130 | 0.026 | 1 | 0.149 | -.125 | 0.078 |
| As | 1 | 0.616** | 0.074 | 0.040 | 1 | 0.236 | -.068 | -.109 | 1 | 0.164 | 0.303 | 0.113 | | 1 | 0.136 | 0.179 |
| Pb | | 1 | 0.359* | 0.254 | | 1 | -.153 | -.021 | | 1 | 0.057 | 0.208 | | | 1 | 0.096 |
| Cd | | | 1 | 0.405* | | | 1 | 0.202 | | | 1 | -.073 | | | | |

Hc, Head capsule; Gi, Gill; He, Hepatopancreas; Am, Abdominal muscle; “*” indicates $P < 0.05$, “**” indicates $P < 0.01$.