Table S1 Mass-to-charge ratios of [M-Cl]- ions of the two most abundant isotopes of SCCPs and MCCPs congeners

|  |  |  |
| --- | --- | --- |
|  | SCCP | MCCP(Interference ion) |
| Group NO. | Formula | Ion1\*（100%） | Ion 2 | Rt(min) | Formula | Ion1\*（100%） | Ion 2 | Rt(min) |
| Injection 1 | C10H16Cl6 | 313 | 315（64%） | 18.2-20.4 | C15H28Cl4 | 313 | 315(96%) | 18.9-25.6 |
| C10H15Cl7 | 347 | 349（80%） | 19.0-22.0 | C15H27Cl5 | 349 | 347(78%) | 17.8-26.7 |
| C10H14Cl8 | 381 | 383（96%） | 20.0-22.2 | C15H26Cl6 | 383 | 385(64%) | 20.5-23.9 |
| C10H13Cl9 | 417 | 415（89%） | 20.4-23.0 | C15H25Cl7 | 417 | 419(80%) | 20.8-25.1 |
| C10H12Cl10 | 451 | 449（78%） | 21.2-23.8 | C15H24Cl8 | 451 | 453(96%) | 21.0-23.8 |
| Injection 2 | C11H18Cl6 | 327 | 329（64%） | 19.0–22.0 | C16H30Cl4 | 327 | 329(96%) | 19.2-24.3 |
| C11H17Cl7 | 361 | 363（80%） | 19.2–22.2 | C16H29Cl5 | 363 | 361(78%) | 19.6-24.6 |
| C11H16Cl8 | 395 | 397（96%） | 20.0–23.0 | C16H28Cl6 | 397 | 399(64%) | 20.4-25.3 |
| C11H15Cl9 | 431 | 429（89%） | 20.6–23.0 | C16H27Cl7 | 431 | 433(80%) | 20.3-25.8 |
| C11H14Cl10 | 465 | 463（78%） | 21.2–24.2 | C16H26Cl8 | 465 | 467(96%) | 20.8-26.7 |
| Injection 3 | C12H20Cl6 | 341 | 343（64%） | 19.4–22.4 | C17H32Cl4 | 341 | 343(96%) | 19.7-24.9 |
| C12H19Cl7 | 375 | 377（80%） | 20.0–22.4 | C17H31Cl5 | 377 | 375(78%) | 20.3-25.1 |
| C12H18Cl8 | 409 | 411（96%） | 21.0–22.8 | C17H30Cl6 | 411 | 413(64%) | 21.3-25.9 |
| C12H17Cl9 | 445 | 443（89%） | 21.0–23.4 | C17H29Cl7 | 445 | 447(80%) | 21.9-26.4 |
| C12H16Cl10 | 479 | 477（78%） | 22.0–24.0 | C17H28Cl8 | 479 | 481(96%) | 22.3-26.6 |
| Injection 4 | C13H21Cl7 | 389 | 391（80%） | 20.4–23.0 | C14H23Cl7 | 403 | 405(80%) | 20.5-25.1 |
| C13H20Cl8 | 423 | 425（96%） | 21.0–23.4 | C14H22Cl8 | 437 | 439(96%) | 20.7-25.9 |
| C13H19Cl9 | 459 | 457（89%） | 22.0–24.0 | C14H21Cl9 | 473 | 471(89%) | 21.2-26.1 |
| C13H18Cl10 | 493 | 491（78%） | 23.2–25.2 | C14H20Cl10 | 507 | 505(78%) | 22.2-27.2 |

Note:\* represent the Quantitative ions

Table S2 Basic information for donors ,infants and breat milk

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sample NO  | Donor NO. | Type | Body weight (Baby,kg) | Residence | Occupation | Education | Harmful factors | Age(year) | Height(cm) | Weight before pregnancy(kg) | Weight at the end of pregnancy(kg) | Water content（%） | Concentration of SCCPs(μg/g) |
| 1 | 1 | 1 | 3.8 | 1 | 1 | 5 | 1 | 32.7 | 157 | 62 | 79 | 0.852 | 6.35 |
| 2 | 2 | 1 | 3 | 2 | 2 | 6 | 1 | 29.1 | 163 | 52 | 71 | 0.862 | 9.09 |
| 3 | 3 | 1 | 2.7 | 1 | 5 | 5 | 1 | 29.8 | 156 | 46 | 63 | 0.820 | 1.30 |
| 4 | 4 | 1 | 3.7 | 1 | 2 | 6 | 2 | 27.7 | 166 | 59 | 80 | 0.881 | 2.39 |
| 5 | 5 | 1 | 3.7 | 2 | 2 | 6 | 1 | 28.2 | 163 | 50 | 62 | 0.844 | 0.79 |
| 6 | 6 | 1 | 2.8 | 1 | 10 | 4 | 1 | 25 | 157 | 49 | 64 | 0.898 | 1.29 |
| 7 | 7 | 1 | 2.5 | 1 | 2 | 6 | 1 | 25.9 | 165 | 60 | 73 | 0.873 | 4.82 |
| 8 | 8 | 1 | 3.2 | 2 | 8 | 4 | 1 | 20.8 | 160 | 49 | 63 | 0.911 | 2.69 |
| 9 | 9 | 1 | 3.7 | 1 | 1 | 7 | 1 | 29.1 | 173 | 67 | 77 | 0.905 | 1.40 |
| 10 | 10 | 1 | 3.4 | 2 | 5 | 6 | 1 | 29.5 | 171 | 60 | 80 | 0.862 | 4.99 |
| 11 | 11 | 1 | 3.3 | 1 | 2 | 6 | 1 | 25.2 | 157 | 49 | 63 | 0.891 | 5.72 |
| 12 | 12 | 1 | 3.7 | 1 | 2 | 6 | 1 | 28.6 | 168 | 60 | 80 | 0.878 | 4.63 |
| 13 | 13 | 1 | 3 | 1 | 2 | 6 | 1 | 27.8 | 162 | 65 | 85 | 0.893 | 11.51 |
| 14 | 14 | 1 | 2.8 | 1 | 5 | 5 | 1 | 26.8 | 160 | 49 | 53 | 0.900 | 2.32 |
| 15 | 15 | 1 | 3.4 | 2 | 8 | 4 | 1 | 22.1 | 165 | 60 | 76 | 0.890 | 1.13 |
| 16 | 16 | 1 | 3.3 | 2 | 8 | 4 | 1 | 24.6 | 164 | 51 | 66 | 0.899 | 0.31 |
| 17 | 17 | 1 | 4.5 | 1 | 8 | 4 | 1 | 39.7 | 155 | 51 | 67 | 0.896 | 0.56 |
| 18 | 18 | 1 | 3.5 | 1 | 4 | 5 | 1 | 26.4 | 160 | 55 | 57 | 0.902 | 0.39 |
| 19 | 19 | 1 | 3.2 | 2 | 10 | 4 | 1 | 23 | 160 | 44 | 60 | 0.859 | 6.27 |
| 20 | 20 | 1 | 3.4 | 2 | 2 | 5 | 1 | 31.1 | 166 | 65 | 87 | 0.898 | 0.21 |
| 21 | 21 | 1 | 3.5 | 1 | 5 | 4 | 1 | 26.6 | 167 | 52 | 73 | 0.872 | 1.30 |
| 22 | 22 | 1 | 4.1 | 1 | 10 | 6 | 1 | 25.6 | 168 | 57 | 67 | 0.887 | 4.85 |
| 23 | 23 | 1 | 3.9 | 1 | 10 | 6 | 1 | 32.2 | 161 | 65 | 81 | 0.899 | 6.75 |
| 24 | 24 | 1 | 3.3 | 1 | 5 | 6 | 1 | 32.3 | 159 | 51 | 62 | 0.865 | 0.30 |
| 25 | 25 | 1 | 3.8 | 1 | 10 | 6 | 1 | 32.9 | 163 | 40 | 60 | 0.896 | 0.61 |
| 26 | 26 | 1 | 3.9 | 1 | 8 | 5 | 1 | 35.8 | 158 | 45 | 62 | 0.858 | 10.64 |
| 27 | 27 | 1 | 2.8 | 1 | 5 | 5 | 1 | 33.7 | 163 | 55 | 80 | 0.882 | 16.12 |
| 28 | 28 | 1 | 2.8 | 1 | 4 | 6 | 1 | 25.7 | 161 | 50 | 70 | 0.906 | 5.47 |
| 29 | 29 | 1 | 2.7 | 1 | 8 | 5 | 1 | 30.8 | 162 | 70 | 86 | 0.905 | 0.23 |
| 30 | 30 | 1 | 4.1 | 2 | 10 | 4 | 1 | 20.8 | 162 | 70 | 87 | 0.895 | 6.47 |
| 31 | 31 | 1 | 3.9 | 2 | 10 | 4 | 1 | 28.8 | 168 | 62 | 71 | 0.869 | 0.73 |
| 32 | 32 | 1 | 3 | 2 | 10 | 4 | 1 | 25.4 | 155 | 52 | 68 | 0.893 | 7.19 |
| 33 | 33 | 1 | 4.0 | 2 | 10 | 5 | 1 | 24.1 | 158 | 60 | 87 | 0.836 | 2.24 |
| 34 | 35 | 4 | 7.7 | 1 | 10 | 5 | 1 | 28.9 | 160 | 59 | 72 | 0.883 | 3.82 |
| 35 | 36 | 4 | 7.2 | 1 | 4 | 7 | 1 | 26.9 | 162 | 60 | 76 | 0.904 | 0.33 |
| 36 | 37 | 4 | 6.9 | 1 | 8 |  7 |  1 | 27.2 | 160 | 55 | 68 | 0.900 | 0.56 |
| 37 | 38 | 4 | 7.5 | 1 | 8 | 5 | 1 | 28.9 | 166 | 55 | 70 | 0.900 | 1.20 |
| 38 | 39 | 4 | 7.2 | 1 | 2 | 6 | 1 | 29.4 | 155 | 55 | 70 | 0.873 | 2.47 |
| 39 | 7 | 4 | 7.8 | 1 | 2 | 6 | 1 | 25.9 | 165 | 60 | 73 | 0.874 | 0.44 |
| 40 | 40 | 4 | 6.5 | 1 | 1 | 6 | 1 | 30 | 172 | 56 | 70 | 0.901 | 1.57 |
| 41 | 41 | 4 | 8.4 | 1 | 5 | 6 | 1 | 27 | 155 | 50 | 61 | 0.913 | 1.47 |
| 42 | 42 | 4 | 8.6 | 1 | 5 | 6 | 1 | 28.7 | 159 | 59 | 70 | 0.888 | 1.45 |
| 43 | 43 | 4 | 8.2 | 1 | 5 | 6 | 1 | 30.2 | 158 | 55 | 70 | 0.904 | 1.69 |
| 44 | 44 | 2 | 5 | 1 | 2 | 6 | 1 | 29.1 | 163 | 52 | 71 | 0.873 | 0.74 |
| 45 | 36 | 2 | 5.5 | 1 | 4 | 7 | 1 | 26.9 | 162 | 60 | 76 | 0.915 | 0.39 |
| 46 | 37 | 2 | 5.6 | 1 | 4 | 7 | 1 | 27.2 | 160 | 55 | 68 | 0.870 | 1.52 |
| 47 | 45 | 2 | 5.8 | 2 | 7 | 5 | 1 | 27.7 | 163 | 62 | 76 | 0.877 | 1.80 |
| 48 | 4 | 2 | 5.4 | 1 | 2 | 6 | 2 | 27.7 | 166 | 59 | 80 | 0.888 | 0.83 |
| 49 | 38 | 2 | 6.1 | 1 | 8 | 5 | 1 | 28.9 | 166 | 55 | 70 | 0.896 | 0.84 |
| 50 | 5 | 2 | 4.2 | 2 | 8 |  5 | 1 | 28.2 | 163 | 50 | 62 | 0.887 | 4.52 |
| 51 | 6 | 2 | 4.3 | 1 | 10 | 4 | 1 | 25 | 157 | 49 | 64 | 0.880 | 1.90 |
| 52 | 45 | 2 | 4.7 | 1 | 10 | 5 | 1 | 29.6 | 163 | 47 | 61 | 0.882 | 1.04 |
| 53 | 9 | 2 | 4.2 | 1 | 1 | 7 | 1 | 29.1 | 173 | 67 | 77 | 0.882 | 0.51 |
| 54 | 46 | 2 | 4.5 | 2 | 8 | 5 | 1 | 27.1 | 160 | 65 | 84 | 0.903 | 5.80 |
| 55 | 17 | 2 | 4.6 | 1 | 8 | 4 | 1 | 39.7 | 155 | 51 | 67 | 0.879 | 2.12 |
| 56 | 18 | 2 | 5 | 1 | 4 | 5 | 1 | 26.4 | 160 | 55 | 57 | 0.895 | 0.89 |
| 57 | 20 | 2 | 5.5 | 2 | 2 | 5 | 1 | 31.1 | 166 | 65 | 87 | 0.850 | 3.32 |
| 58 | 46 | 2 | 5 | 1 | 8 | 5 | 1 | 27.4 | 170 | 56 | 75 | 0.826 | 2.77 |
| 59 | 43 | 2 | 5.5 | 1 | 5 | 6 | 1 | 30.2 | 158 | 55 | 70 | 0.864 | 1.95 |
| 60 | 47 | 2 | 5.7 | 2 | 11 | 4 | 1 | 33.5 | 164 | 63 | 75 | 0.863 | 0.50 |
| 61 | 22 | 2 | 5.5 | 1 | 10 | 6 | 1 | 25.6 | 168 | 60 | 75 | 0.885 | 1.61 |
| 62 | 24 | 2 | 5.3 | 1 | 5 | 6 | 1 | 32.3 | 159 | 51 | 62 | 0.829 | 4.07 |
| 63 | 48 | 2 | 5.2 | 1 | 5 | 5 | 1 | 26.2 | 163 | 60 | 76 | 0.871 | 0.83 |
| 64 | 25 | 2 | 4.8 | 1 | 10 | 6 | 1 | 32.9 | 163 | 40 | 60 | 0.883 | 1.04 |
| 65 | 49 | 2 | 5.1 | 1 | 8 | 6 | 1 | 27.8 | 153 | 44 | 60 | 0.890 | 0.69 |
| 66 | 1 | 3 | 7.6 | 1 | 1 | 5 | 1 | 32.7 | 157 | 62 | 79 | 0.888 | 0.44 |
| 67 | 44 | 3 | 8 | 1 | 2 | 6 | 1 | 29.1 | 163 | 52 | 71 | 0.876 | 1.21 |
| 68 | 35 | 3 | 6.8 | 1 | 8 | 6 | 1 | 28.9 | 160 | 59 | 72 | 0.904 | 0.97 |
| 69 | 36 | 3 | 7.5 | 1 | 4 | 7 | 1 | 26.9 | 162 | 60 | 76 | 0.898 | 0.50 |
| 70 | 38 | 3 | 7.6 | 1 | 8 | 5 | 1 | 28.9 | 166 | 55 | 70 | 0.865 | 0.97 |
| 71 | 39 | 3 | 8.5 | 1 | 2 | 6 | 1 | 29.4 | 155 | 55 | 70 | 0.877 | 1.00 |
| 72 | 6 | 3 | 7.4 | 1 | 10 | 4 | 1 | 25 | 157 | 49 | 64 | 0.906 | 1.59 |
| 73 | 7 | 3 | 6.1 | 1 | 2 | 6 | 1 | 25.9 | 165 | 60 | 73 | 0.846 | 0.50 |
| 74 | 8 | 3 | 6.8 | 2 | 8 | 4 | 1 | 20.8 | 160 | 49 | 63 | 0.866 | 1.64 |
| 75 | 45 | 3 | 6.8 | 1 | 10 | 5 | 1 | 29.6 | 163 | 47 | 61 | 0.903 | 2.01 |
| 76 | 40 | 3 | 7.5 | 1 | 1 | 6 | 1 | 30 | 172 | 56 | 70 | 0.908 | 0.00 |
| 77 | 41 | 3 | 6.9 | 1 | 5 | 6 | 1 | 27 | 155 | 50 | 61 | 0.908 | 2.71 |
| 78 | 50 | 3 | 7.3 | 2 | 9 | 3 | 1 | 31 | 155 | 53 | 64 | 0.844 | 4.08 |
| 79 | 51 | 3 | 7.4 | 2 | 10 | 5 | 1 | 29.4 | 156 | 60 | 75 | 0.877 | 1.51 |
| 80 | 52 | 3 | 7.7 | 1 | 5 | 6 | 1 | 28.7 | 159 | 59 | 70 | 0.903 | 0.76 |
| 81 | 53 | 3 | 8.1 | 2 | 8 | 5 | 1 | 31.7 | 152 | 47 | 74 | 0.878 | 1.41 |
| 82 | 17 | 3 | 8.2 | 1 | 8 | 4 | 1 | 39.7 | 155 | 51 | 67 | 0.883 | 1.05 |
| 83 | 18 | 3 | 7.6 | 1 | 4 | 5 | 1 | 26.4 | 160 | 55 | 57 | 0.891 | 0.57 |
| 84 | 20 | 3 | 8 | 2 | 2 | 5 | 1 | 31.1 | 166 | 65 | 87 | 0.911 | 0.31 |
| 85 | 54 | 3 | 7.5 | 2 | 11 | 4 | 1 | 33.5 | 164 | 63 | 75 | 0.876 | 0.87 |
| 86 | 25 | 3 | 6.8 | 1 | 10 | 6 | 1 | 32.9 | 163 | 40 | 60 | 0.889 | 0.91 |

 Note: Type: 1. Fore milk, 2. One month after birth, 3.Three months after birth 4. Six months after birth.

Occupation: 1. Leading cadres in party and government, business, and social organizations, 2. Senior executives in large and medium-sized enterprises,3. Private entrepreneurs, 4. Professional technicians,5. Service personnel (public servants of party and government agencies, grass-roots management personnel of enterprises and institutions),6. Individual industrial and commercial workers,7. Business, service personnel (service staff, salesmen, etc.), 8. Industrial workers,9. Agriculture, forestry, animal husbandry and fishery workers,10. Unemployed and underemployed people in urban and rural areas, 11. Others.

Education: 1. Illiteracy; 2. Elementary school; 3. Junior school; 4. High school; 5. College 6 Undergraduate; 7. Graduate and above.

# Chemical calculation method

For example, quantitative and qualitative ions of the SCCPs congener of C10H15Cl7 were 347 and 349 respectively, in contrast, the two ions were qualitative and quantitative particles of MCCPs congener of C15H27Cl5. If the C10H15Cl7 and C15H27Cl5 were present in the same sample, the peak area of 347 and 349 are produced by C10H15Cl7 and C15H27Cl5 together. Then it consumed that the peak area of 347 was represent as A1, and the peak area of 349 was represent as A2. In A1, the contributions of C10H15Cl7 and C15H27Cl5 were presented as X1 and X2, respectively. The isotope ratios of quantitative and qualitative ions could be found in the Table S1, Then the bilinear equation set A1= X1 + X2(1) A2=0.8X1+0.78 X2(2) was set up. The X1 and X2 could be obtained through solving equations. And the interference brought by C15H27Cl5 could be subtracted effectively.