**Supplemental Table 1.** The compounds qualified and quantified (%) in Es or CH2Cl2 part extracted from PR [9-10].

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. | Compounds | CAS | Linear retention indices (LRIs)b, d | Retention time (RT) (min) [9] | Retention indices (RIs) [10] | Content |
| Aboveground [9] | Underground [9] | Flower [10] | Leaf [10] | Root [10] |
| Tibet | Yunnan | Qinghai | Tibet | Yunnan | Qinghai | Tibet | Yunnan | Qinghai |
| 1 |  *n*-Octane | 111-65-9 | 800, 800 |  | 818 |  |  | nd | 0.13 | tr | 0.47 | 0.11 | 0.16 | nd | 0.22 | 0.12 |
| 2 | Dimethyl heptane | - | -, - |  | 837 |  |  | nd | tr | nd | nd | tr | tr | nd | 0.18 | tr |
| 3 | Dimethyl heptene | - | -, - |  | 857 |  |  | nd | 0.12 | tr | nd | 0.1 | 0.13 | nd | 0.37 | 0.19 |
| 4 | α-Pinene | 80-56-8 | 937, 1028 |  | 940 |  |  | 0.22 | nd | nd | 0.23 | nd | nd | nd | nd | nd |
| 5 | Hexanoic acid (6:0) | 142-62-1 | 990, 1846 | 4.21 |  | 0.36 | - |  |  |  |  |  |  |  |  |  |
| 6 | Dimethyl nonane | - | -, - |  | 1029 |  |  | nd | tr | nd | nd | tr | tr | nd | 0.12 | 0.12 |
| 7 | Methyl decane | - | -, - |  | 1038 |  |  | nd | tr | nd | nd | tr | tr | nd | 0.1 | tr |
| 8 | 2-Hydroxy-benzaldehyde | 90-02-8 | 1047, 1672 | 3.71 |  | - | 0.76  |  |  |  |  |  |  |  |  |  |
| 9 | Dimethyldecane | - | -, - |  | 1062 |  |  | nd | 0.34 | tr | 0.12 | 0.3 | 0.36 | nd | 0.5 | 0.44 |
| 10 | Butyloctanol |  |  |  | 1083 |  |  | nd | 0.24 | tr | tr | 0.2 | 0.23 | nd | 0.28 | 0.26 |
| 11 | n-Undecane | 1120-21-4 |  |  | 1103 |  |  | nd | 0.52 | tr | nd | 0.25 | 0.61 | nd | 0.43 | 0.48 |
| 12 | Linalool | 78-70-6 | 1099, 1547 |  | 1103 |  |  | nd | nd | nd | 0.18 | nd | nd | nd | nd | nd |
| 13 | Dimethyl decene |  |  |  | 1105 |  |  | nd | 0.23 | tr | nd | 0.18 | 0.23 | nd | 0.39 | 0.34 |
| 14 | Benzeneethanol | 60-12-8 | 1116, 1906 |  | 1120 |  |  | nd | nd | nd | 0.15 | nd | nd | nd | nd | nd |
| 15 | Tetramethyl-4-piperidone |  |  |  | 1124 |  |  | nd | nd | nd | 0.14 | nd | nd | nd | nd | nd |
| 16 | Caprylic acid (8:0) | 124-07-2 | 1180, 2060 | 5.4 |  | 0.8 | - |  |  |  |  |  |  |  |  |  |
| 17 | Naphthalene | 91-20-3 | 1182, 1745 |  | 1195 |  |  | tr | nd | nd | tr | nd | nd | nd | nd | nd |
| 18 | Dodecane | 112-40-3 | 1200, 1200 |  | 1202 |  |  | nd | 0.1 | tr | nd | tr | tr | nd | 0.11 | 0.12 |
| 19 | Dimethylundecane | - | -, - |  | 1231 |  |  | nd | 0.24 | tr | nd | 0.17 | 0.24 | nd | 0.3 | 0.27 |
| 20 | Methyldodecane | - | -, - |  | 1283 |  |  | nd | 0.36 | 0.12 | nd | 0.32 | 0.33 | nd | 0.46 | 0.42 |
| 21 | Dimethyldodecane | - | -, - |  | 1284 |  |  | 0.19 | 0.78 | 0.2 | 0.47 | 0.85 | 0.73 | nd | 0.97 | 0.91 |
| 22 | 2-Butyl-1-octanol | 3913-02-8 | 1277, 1851 |  | 1325 |  |  | nd | 0.3 | 0.1 | nd | 0.31 | 0.27 | nd | 0.33 | 0.36 |
| 23 | 2-Hexyl-1-octanol | 19780-79-1 | , 2116 |  | 1334 |  |  | nd | 0.23 | tr | nd | 0.25 | 0.20  | nd | 0.26 | 0.28 |
| 24 | Trimethyldodecane |  |  |  | 1348 |  |  | nd | 0.57 | 0.11 | 0.34 | 0.51 | 0.53  | nd | 0.66 | 0.20  |
| 25 | *n*-Tetradecane | 629-59-4 | 1400, 1400 |  | 1401 |  |  | 1.16 | 0.14 | 0.15 | nd | 0.41 | 0.19 | 2 | 0.8 | 0.25 |
| 26 | Isocaryophyllene | 118-65-0 | 1406, 1587 |  | 1442 |  |  | 0.2 | 0.2 | tr | 0.18 | tr | nd | nd | nd | nd |
| 27 | Hydroxyproline | 51-35-4 | -, - | 11.07 |  | 4.63 | - |  |  |  |  |  |  |  |  |  |
| 28 | *n*-Pentadecane | 629-62-9 | 1500, 1500 |  | 1502 |  |  | 3.48 | 1.18 | 0.59 | nd | 2.07 | 1.06 | 5.71 | 2.07 | 1.15 |
| 29 | 2,4-Di-tert-butylphenol | 96-76-4 | 1519, 2318 |  | 1539 |  |  | nd | 2.09 | 1.96 | 1.85 | 2.86 | 1.67 | 2.32 | 1.48 | 2.2 |
| 30 | 2-Hexyl-1-octanol | 19780-79-1 | , 2116 |  | 1544 |  |  | nd | 0.18 | tr | nd | 0.2 | 0.17 | 0.28 | 0.21 | 0.21 |
| 31 | Trimethyltetradecane | - | -, - |  | 1548 |  |  | nd | 0.58 | 0.27 | 0.51 | 0.43 | 0.55 | nd | 0.81 | 0.67 |
| 32 | Dodecanoic acid (12:0) | 143-07-7 | 1568, 2497 | 8.89 |  | 0.37 | 0.78  |  |  |  |  |  |  |  |  |  |
| 33 | 1-Tridecanol | 112-70-9 | 1577, 2074 |  | 1582 |  |  | nd | nd | nd | 0.51 | nd | nd | nd | nd | nd |
| 34 | Cedrol | 77-53-2 | 1598, 2116 | 7.25 |  | 0.16 | - |  |  |  |  |  |  |  |  |  |
| 35 | *n*-Cetane | 544-76-3 | 1600, 1600 |  | 1604 |  |  | 4.13 | 0.17 | 0.12 | 2.23 | 0.79 | 0.21 | 7.17 | 0.77 | 0.24 |
| 36 | 7-Methyl-cyclopentapyran-4-carboxylic acid methylester | - | -, - |  | 1611 |  |  | nd | nd | nd | 0.53 | nd | nd | nd | nd | nd |
| 37 | Hexahydrofarnesol | 6750-34-1 | 1571, - |  | 1683 |  |  | nd | nd | nd | 0.41 | nd | nd | nd | nd | nd |
| 38 | Diisobutyl adipate | 141-04-8 | 1695, 2126 |  | 1690 |  |  | 0.45 | nd | nd | 0.66 | nd | nd | nd | nd | nd |
| 39 | *n*-Heptadecane | 629-78-7 | 1700, 1700 |  | 1704 |  |  | 3.68 | 0.37 | tr | 2.73 | 0.68 | 0.38 | 7.69 | 0.6 | 0.26 |
| 40 | Trimethylpentadecane | - | -, - |  | 1719 |  |  | nd | 0.55 | 0.35 | 0.61 | 0.67 | 0.56 | nd | 0.68 | 0.63 |
| 41 | Tetramethylhexadecane | - | -, - |  | 1758 |  |  | tr | 0.62 | 0.44 | 0.45 | 0.41 | 0.9 | nd | 0.47 | 0.41 |
| 42 | Myrisitc acid (14:0) | 544-63-8 | 1768, 2694 | 11.41 | 1765 | 1.45 | 1.02  | 0.94 | 2.77 | 4.09 | 1.81 | 2.26 | 2.8 | nd | 1.4 | 1.96 |
| 43 | *n*-Octadecane | 593-45-3 | 1800, 1800 |  | 1804 |  |  | 2.24 | nd | nd | 1.57 | nd | nd | 4.93 | tr | tr |
| 44 | Trimethylpentadecan-2-ol | - | -, - |  | 1847 |  |  | 1.79 | 2.85 | 1.86 | 7.5 | 6.35 | 5.06 | nd | tr | nd |
| 45 | Hexahydrofarnesyl acetone | 502-69-2 | 1844, 2131 |  | 1853 |  |  | 0.49 | 0.54 | 0.55 | 0.91 | 0.73 | 0.81 | nd | nd | nd |
| 53 | 12-Methyl-tetradecanoic acid (15:0) | - | -, - | 12.38 |  | 0.46 | 0.19  |  |  |  |  |  |  |  |  |  |
| 46 | Pentadecanoic acid (15:0) | 1002-84-2 | 1867, 2822 | 12.81 |  | 1.26 | 0.83  |  |  |  |  |  |  |  |  |  |
| 47 | Trimethylpentadecan-1-ol | - | -, - |  | 1890 |  |  | nd | 1.32 | 0.93 | 3.34 | 2.89 | 2.33 | 3.78 | tr | nd |
| 48 | *n*-Nonadecane | 629-92-5 | 1900, 1900 |  |  |  |  | 1.87 | 0.18 | 0.13 | 1.6 | 0.13 | 0.1 | 1.58 | nd | nd |
| 49 | Trimethyloctadecane |  |  |  | 1934 |  |  | 0.65 | 1.15 | 1.03 | 0.95 | 1.41 | 1.01 | 0.55 | 1.28 | 1.19 |
| 50 | 9-Hexadecenoic acid (16:1, n-7) | - | -, - | 14.6 |  | 6.2 | 4.35  |  |  |  |  |  |  |  |  |  |
| 51 | Dibutyl phthalate | 84-74-2 | 1965, 2680 | 12.02 |  | 0.78 | 0.48  |  |  |  |  |  |  |  |  |  |
| 52 | 9,17-Octadecadienol | - | -, - | 12.2 |  | 0.43 | 0.62  |  |  |  |  |  |  |  |  |  |
| 54 | 14-Pentadecenoic acid (15:1, n-1) | 17351-34-7 | -, - | 12.98 |  | 3.21 | 2.60  |  |  |  |  |  |  |  |  |  |
| 55 | PA (16:0) | 57-10-3 | 1968, 2931 | 14.38  | 1967 | 50.9 | 34.51  | 9.97 | 11.25 | 14.98 | 7.08 | 12.42 | 12.22 | 9.65 | 16.95 | 18.54 |
| 56 | *n*-Eicosane | 112-95-8 | 2000, 2000 |  | 2000 |  |  | 0.75 | nd | nd | 0.57 | nd | nd | 1.5 | nd | nd |
| 57 | *n*-Heneicosane | 629-94-7 | 2100, 2100 |  |  |  |  | nd | nd | nd | nd | nd | nd | 0.74 | nd | nd |
| 58 | Phytol | 150-86-7 | 2114, 2622 |  |  |  |  | nd | 0.64 | 0.22 | 2.1 | 1.56 | 1.43 | nd | nd | nd |
| 59 | Oleic acid (18:1, n-9) | 112-80-1 | 2141, 3173 | 17.4 |  | 13.44 | 11.05  |  |  |  |  |  |  |  |  |  |
| 60 | Linoleic acid (18:2, n-6) | 60-33-3 | 2133, 3164 | 17.79 |  | 7.56 | 23.92  | 6.9 | 11.38 | 15.78 | 2.75 | 3.54 | 9.36 | 8.06 | 18.63 | 19.11 |
| 61 | Linolenic acid methyl ester | 301-00-8 | 2098, 2571 |  |  |  |  | 11.9 | 10.63 | 8.77 | 11.19 | 11.55 | 18.23 | 18.38 | 20.8 | 17.31 |
| 62 | Stearic acid (18:0) | 57-11-4 | 2172, 3136 |  |  |  |  | 2.41 | 4.07 | 3.81 | 2.02 | 4.52 | 2.92 | tr | 7.83 | 6.66 |
| 63 | Linoleic acid ethyl ester | 544-35-4 | 2162, 2521 | 18.48 |  | 1.7 | 14.36  |  |  |  |  |  |  |  |  |  |
| 64 | Cyclohexenylacetic acid | - | -, - |  |  |  |  | 2.41 | 4.07 | 3.36 | nd | tr | tr | nd | nd | nd |
| 65 | *n*-Docosane | 629-97-0 | 2200, 2200 |  |  |  |  | 0.42 | nd | nd | nd | nd | nd | nd | nd | nd |
| 66 | *n*-Tricosane | 638-67-5 | 2300, 2300 |  |  |  |  | 1.03 | 0.54 | nd | nd | 0.45 | nd | nd | 0.2 | nd |
| 67 | 9-Octadecenamide | 3322-62-1 | 2334, - |  |  |  |  | nd | 1.12 | 1.14 | 0.28 | 0.14 | 1.67 | nd | 0.39 | 0.17 |
| 68 | *n*-Tetracosane | 646-31-1 | 2400, 2400 |  |  |  |  | 0.78 | 0.44 | 0.3 | 0.6 | 0.37 | 0.19 | nd | nd | 0.11 |
| 69 | *n*-Pentacosane | 629-99-2 | 2500, 2500 |  |  |  |  | 1.72 | 1.07 | 0.76 | 0.86 | 0.29 | nd | nd | nd | 0.13 |
| 70 | *n*-Hexacosane | 630-01-3 | 2600, 2600 |  |  |  |  | 0.63 | 0.59 | 0.5 | 0.67 | 0.44 | nd | nd | nd | 0.16 |
| 71 | n-Heptacosane | 593-49-7 | 2700, 2700 |  |  |  |  | 2.82 | 2.50  | 2 | 0.98 | 0.53 | 0.49 | nd | nd | tr |
| 72 | Glyceryl monostearate | - | -, - |  |  |  |  | 0.33 | nd | nd | nd | nd | nd | nd | nd | nd |
| 73 | n-Octacosane | 630-02-4 | 2800, 2800 |  |  |  |  | 0.84 | 0.53  | 0.5 | 0.48 | 0.39 | nd | nd | nd | nd |
| 74 | Squalene | 111-02-4 | 2832, 2865 |  |  |  |  | nd | 0.77  | 0.29 | 0.56 | 1.16 | nd | nd | nd | nd |
| 75 | n-Nonacosane | 630-03-5 | 2900, 2900 |  |  |  |  | 4.33 | 4.77  | 4.8 | 3.29 | 2.86 | 2.33 | nd | nd | nd |
| 76 | n-Triacontane | 638-68-6 | 3000, 3000 |  |  |  |  | 0.8 | nd | nd | 0.83 | nd | nd | nd | nd | nd |
| 77 | n-Hentriacontane | 630-04-6 | 3100, 3100 |  |  |  |  | 4.08 | 6.73  | 7.76 | 7.18 | 8.58 | 8.45 | nd | nd | 0.45 |
| 78 | n-Dotriacontane | 544-85-4 | 3200, 3200 |  |  |  |  | nd | nd | nd | 0.74 | nd | nd | nd | nd | nd |
| 79 | Campesterol | 474-62-4 | 3131, - |  |  |  |  | 2.82 | 1.73  | 1.89 | 2.69 | 2.92 | 1.28 | 8.83 | 3.92 | 4.56 |
| 80 | n-Tritriacontane | 630-05-7 | 3300, 3300 |  |  |  |  | 3.04 | 1.37  | 2.18 | 5.08 | 0.93 | 2.34 | nd | nd | 1.25 |
| 81 | *β*-Sitosterol | 83-46-5 | 3200, - |  |  |  |  | 16.63 | 13.72  | 16.46 | 15.04 | 18 | 15.15 | 14.84 | 13.05 | 16.57 |
|  | Total (81, 17, 67) |  |  |  |  | 93.71 | 95.47 | 96.1 | 96.97 | 98.5 | 95.44 | 96.49 | 97.88 | 98.01 | 98.02 | 98.7 |
|  | Common (3, 3, 3) |  |  |  |  | 59.91 | 59.45 | 17.81 | 25.4 | 34.85 | 11.64 | 18.22 | 24.38 | 17.71 | 36.98 | 39.61 |
|  | Hydrocarbon monoterpenes (1, 0, 1) |  |  |  |  |  |  | 0.22 | 0 | 0 | 0.23 | 0 | 0 | 0 | 0 | 0 |
|  | Alcohol monoterpenes (1, 0, 1) |  |  |  |  |  |  | 0 | 0 | 0 | 0.18 | 0 | 0 | 0 | 0 | 0 |
|  | Hydrocarbon sesquiterpenes (1, 0, 1) |  |  |  |  |  |  | 0.2 | 0.2 | 0 | 0.18 | 0 | 0 | 0 | 0 | 0 |
|  | Alcohol sesquiterpenes (2, 1, 1) |  |  |  |  | 0.16 | 0 | 0 | 0 | 0 | 0.41 | 0 | 0 | 0 | 0 | 0 |
|  | Alcohol diterpenes (1, 0, 1) |  |  |  |  |  |  | 0 | 0.64 | 0.22 | 2.1 | 1.56 | 1.43 | 0 | 0 | 0 |
|  | Aldehydes (1, 1, 0) |  |  |  |  | 0 | 0.76 |  |  |  |  |  |  |  |  |  |
|  | Alcohols (1, 1, 0) |  |  |  |  | 0.43 | 0.62 |  |  |  |  |  |  |  |  |  |
|  | Ketones (1, 0, 1) |  |  |  |  |  |  | 0.49 | 0.54 | 0.55 | 0.91 | 0.73 | 0.81 | 0 | 0 | 0 |
|  | Piperidone (1, 0, 1) |  |  |  |  |  |  | 0 | 0 | 0 | 0.14 | 0 | 0 | 0 | 0 | 0 |
|  | Amide (1, 0, 1) |  |  |  |  |  |  | 0 | 1.12 | 1.14 | 0.28 | 0.14 | 1.67 | 0 | 0.39 | 0.17 |
|  | Fatty acids (FAs) (12, 11, 4) |  |  |  |  | 86.01 | 79.25 | 20.22 | 29.47 | 38.66 | 13.66 | 22.74 | 27.3 | 17.71 | 44.81 | 46.27 |
|  | FAs with odd carbons (3, 3, 0) |  |  |  |  | 4.93 | 3.62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | FAs with even carbons (9, 8, 4) |  |  |  |  | 81.08 | 75.63 | 20.22 | 29.47 | 38.66 | 13.66 | 22.74 | 27.3 | 17.71 | 44.81 | 46.27 |
|  | Long-chain FAs (LCFAs) (9, 8, 4) |  |  |  |  | 84.48 | 78.47 | 20.22 | 29.47 | 38.66 | 13.66 | 22.74 | 27.3 | 17.71 | 44.81 | 46.27 |
|  | Medium-chain FAs (MCFAs) (2, 2, 0) |  |  |  |  | 1.17 | 0.78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | Short-chain FAs (SCFAs) (1, 1, 0) |  |  |  |  | 0.36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | Saturated FAs (SFAs) (8, 7, 3) |  |  |  |  | 55.6 | 37.33 | 13.32 | 18.09 | 22.88 | 10.91 | 19.2 | 17.94 | 9.65 | 26.18 | 27.16 |
|  | Monounsaturated FAs (MUFAs) (3, 3, 0) |  |  |  |  | 22.85 | 18 |  |  |  |  |  |  |  |  |  |
|  | Polyunsaturated FAs (PUFAs) (1, 1, 1) |  |  |  |  | 7.56 | 23.92 | 6.9 | 11.38 | 15.78 | 2.75 | 3.54 | 9.36 | 8.06 | 18.63 | 19.11 |
|  | Proline (1, 1, 0) |  |  |  |  | 4.63 | 0 |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Esters (5, 1, 4) |  |  |  |  | 0.78 | 0.48 | 12.68 | 10.63 | 8.77 | 12.38 | 11.55 | 18.23 | 18.38 | 20.8 | 17.31 |
|  | Phthalates (1, 1, 0) |  |  |  |  | 0.78 | 0.48 |  |  |  |  |  |  |  |  |  |
|  | Esters of FAs (4, 0, 4) |  |  |  |  |  |  | 12.68 | 10.63 | 8.77 | 12.38 | 11.55 | 18.23 | 18.38 | 20.8 | 17.31 |
|  | Total oxygenated compounds (36, 16, 23) |  |  |  |  | 92.01 | 81.11 | 54.63 | 63.44 | 71.51 | 57.8 | 67.5 | 73.2 | 62.36 | 85.2 | 87.83 |
|  | Alkanes (35, 0, 35) |  |  |  |  |  |  | 38.64 | 26.52 | 22.31 | 33.33 | 24.35 | 21.72 | 31.87 | 11.73 | 9.98 |
|  | n-Alkanes (22, 0, 22) |  |  |  |  |  |  | 37.8 | 21.2 | 19.79 | 29.41 | 19.17 | 16.35 | 31.32 | 4.98 | 4.6 |
|  | Branched alkanes (13, 0, 13) |  |  |  |  |  |  | 0.84 | 5.32 | 2.52 | 3.92 | 5.18 | 5.37 | 0.55 | 6.75 | 5.38 |

Note: - or blank means no related information; RT gotten form AT-WAX (30 m × 0.25 mm × 0.25 µm); RIs relative to C8-C20 *n*-alkanes on HP-5 column; tr (trace quantities) (<0.1%); nd (not detected); LRIsb, d detected by semi-standard apolar column and polar column are gotten from National Institute of Standards and Technology (NIST) 17 library, respectively. SCFAs refer to the chain that is less than seven carbons; MCFAs refer to the chain from seven to twelve carbons; LCFAs refer to the chain that is longer than twelve carbons. FAs are represented by number of carbon atoms in fatty carboxyl chain:number of double bonds. The n- designates the location of the double bond nearest the methyl terminus. The three numbers in bracket of each kind of compounds mean the total number, the number in reference [9] and the number in reference [10], respectively.

**Supplemental Table 2.** The AOAs data of each method.

|  |  |  |  |
| --- | --- | --- | --- |
| SamplesMethods | DPPH | ABTS |  Ferric reducing/antioxidant power (FRAP) |
| Concentration | OD | RSA | IC50 | OD | RSA | IC50 | OD | Ferric reducing ability(mmol·L–1) |
| E8 (μg·mL–1) | 50 | 0.179±0.003 | 8.38% | ND | 0.215±0.004 | 4.78% | 133.1 mg·mL–1 | 0.196±0.027 | 0.0395 |
| 80 | 0.187±0.002 | 3.93% | 0.213±0.002 | 5.60% | 0.101±0.003 | 0.0237 |
| 110 | 0.186±0.003 | 4.44% | 0.212±0.003 | 6.34% | 0.097±0.001 | 0.0231 |
| E9 (μg·mL–1) | 50 | 0.193±0.005 | 1.20% | 764.96 mg·mL–1 | 0.223±0.002 | 1.33% | ND | 0.076±0 | 0.0196 |
| 80 | 0.192±0.003 | 1.37% | 0.222±0.009 | 1.62% | 0.076±0.001 | 0.0196 |
| 110 | 0.191±0.001 | 1.88% | 0.223±0.002 | 1.47% | 0.077±0.001 | 0.0197 |
| E10 (μg·mL–1) | 50 | 0.199±0.003 | -2.05% | ND | 0.228±0.002 | -0.88% | 0.227 mg·mL–1 | 0.082±0.002 | 0.0206 |
| 80 | 0.198±0.001 | -1.54% | 0.224±0.001 | 0.74% | 0.092±0.002 | 0.0222 |
| 110 | 0.197±0.001 | -0.85% | 0.22±0.001 | 2.51% | 0.108±0.001 | 0.0248 |
| RC8 (μg·mL–1) | 50 | 0.192±0.001 | 1.54% | 0.629 mg·mL–1 | 0.216±0.002 | 4.57% | 0.323 mg·mL–1 | 0.084±0 | 0.0209 |
| 80 | 0.187±0.001 | 3.93% | 0.202±0.001 | 10.47% | 0.091±0.002 | 0.0221 |
| 110 | 0.184±0.001 | 5.81% | 0.192±0.007 | 15.19% | 0.099±0.001 | 0.0233 |
| RC9 (μg·mL–1) | 50 | 0.192±0.005 | 1.37% | ND | 0.224±0.002 | 1.03% | 0.541 mg·mL–1 | 0.078±0.001 | 0.0200 |
| 80 | 0.194±0.003 | 0.51% | 0.219±0.003 | 2.95% | 0.082±0.001 | 0.0206 |
| 110 | 0.195±0.002 | 0.00% | 0.215±0.003 | 4.87% | 0.074±0.008 | 0.0193 |
| RC10 (μg·mL–1) | 50 | 0.186±0.005 | 4.79% | 0.344 mg·mL–1 | 0.201±0.007 | 11.06% | 0.293 mg·mL–1 | 0.09±0.004 | 0.0219 |
| 80 | 0.176±0.004 | 9.74% | 0.188±0.004 | 16.96% | 0.117±0.002 | 0.0265 |
| 110 | 0.166±0.004 | 14.70% | 0.172±0.004 | 23.89% | 0.129±0.002 | 0.0283 |
| C8 (μg·mL–1) | 50 | 0.193±0.002 | 1.03% | ND | 0.216±0.021 | 4.57% | ND | 0.089±0.003 | 0.0218 |
| 80 | 0.196±0.002 | -0.68% | 0.23±0.002 | -1.92% | 0.104±0.003 | 0.0243 |
| 110 | 0.194±0.003 | 0.68% | 0.227±0.001 | -0.59% | 0.118±0.002 | 0.0265 |
| C9 (μg·mL–1) | 50 | 0.194±0.001 | 0.34% | ND | 0.231±0 | -2.21% | ND | 0.088±0.001 | 0.0215 |
| 80 | 0.196±0.001 | -0.68% | 0.23±0.002 | -1.62% | 0.104±0.003 | 0.0242 |
| 110 | 0.193±0.003 | 1.03% | 0.228±0.005 | -1.03% | 0.103±0.002 | 0.0241 |
| C10 (μg·mL–1) | 50 | 0.188±0.002 | 3.76% | ND | 0.222±0.002 | 1.62% | ND | 0.083±0.002 | 0.0207 |
| 80 | 0.191±0.001 | 1.88% | 0.222±0.002 | 1.62% | 0.1±0.001 | 0.0235 |
| 110 | 0.186±0.002 | 4.79% | 0.223±0.001 | 1.33% | 0.117±0.003 | 0.0265 |
| PA (μmol·L–1) | 100 | 0.134±0.019 | 9.46% | ND | 0.265±0.03 | 8.82% | ND | 0.057±0.002 | 0.0165 |
| 200 | 0.156±0.002 | -5.18% | 0.292±0.002 | -0.23% | 0.061±0.008 | 0.0171 |
| 400 | 0.155±0.003 | -4.51% | 0.29±0.004 | 0.23% | 0.075±0.012 | 0.0194 |
| MA (μmol·L–1) | 100 | 0.158±0.008 | -6.53% | ND | 0.291±0.01 | 0.00% | ND | 0.057±0.001 | 0.0163 |
| 200 | 0.156±0.003 | -5.18% | 0.295±0.01 | -1.26% | 0.056±0.002 | 0.0163 |
| 400 | 0.148±0.006 | -0.23% | 0.284±0.01 | 2.41% | 0.056±0.018 | 0.0162 |
| OA (μmol·L–1) | 100 | 0.146±0.001 | 1.58% | ND | 0.286±0.001 | 1.60% | ND | 0.06±0.009 | 0.0168 |
| 200 | 0.154±0 | -4.05% | 0.287±0 | 1.37% | 0.064±0.005 | 0.0176 |
| 400 | 0.155±0.001 | -4.51% | 0.298±0.005 | -2.29% | 0.121±0.019 | 0.0270 |
| OA (mmol·L–1) | 300 | 0.123±0.001 | -2.78% | ND | 0.301±0.017 | 10.85% | 12.14 mol·L–1 | 1.24±0.03 | 0.2137 |
| 600 | 0.12±0.001 | -0.28% | 0.297±0.008 | 12.03% | 0.846±0.065 | 0.1479 |
| 1200 | 0.112±0.004 | 6.39% | 0.269±0.003 | 20.41% | 0.454±0.021 | 0.0826 |
| LA (μmol·L–1) | 100 | 0.156±0.003 | -5.63% | ND | 0.295±0.005 | -1.37% | ND | 0.055±0.001 | 0.0160 |
| 200 | 0.156±0.004 | -5.18% | 0.302±0.003 | -3.67% | 0.066±0.003 | 0.0180 |
| 400 | 0.148±0.002 | -0.23% | 0.285±0.001 | 2.06% | 0.075±0.019 | 0.0195 |
| LA (mmol·L–1) | 300 | 0.098±0.001 | 18.06% | 3.14 mol·L–1 | 0.248±0.007 | 26.73% | 0.871 mol·L–1 | 1.356±0.063 | 0.2329 |
| 600 | 0.088±0 | 26.67% | 0.175±0.004 | 48.13% | 0.899±0.108 | 0.1568 |
| 1200 | 0.078±0.001 | 35.00% | 0.157±0.007 | 53.65% | 0.81±0.08 | 0.1419 |
| Quercetin (QE) (μmol·L–1) | 100 | 0.075±0.002 | 49.55% | 172.5 μmol·L–1 | 0.047±0.001 | 83.73% | <100 μmol·L–1 | 0.748±0.068 | 0.1315 |
| 200 | 0.079±0.004 | 46.62% | 0.05±0.001 | 82.82% | 1.173±0.17 | 0.2025 |
| 400 | 0.065±0.001 | 55.86% | 0.05±0.001 | 82.82% | 1.623±0.348 | 0.2774 |
| Vitamin C (Vc) (μmol·L–1) | 5 | 0.136±0.003 | 8.11% | 15.91 μmol·L–1 | 0.293±0.001 | -0.80% | 26.76 μmol·L–1 | 0.079±0.002 | 0.0201 |
| 10 | 0.115±0.004 | 22.07% | 0.285±0.026 | 2.06% | 0.105±0.008 | 0.0245 |
| 15 | 0.078±0.005 | 47.30% | 0.265±0.002 | 8.93% | 0.145±0.017 | 0.0311 |

OD: optical density, expressed as mean±standard deviation (n=3). RSA: radical scavenging activity; ND: not determined.