**Supplemental Table 1.** The percentage of qualified and quantified compounds in the essential oils (Es) or CH2Cl2 extracts obtained from *Phlomoides rotata* (Benth. ex Hook. f.) Mathiesen (PR) [9-10].

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Compounds | CAS | Linear retention indices (LRIs)a, c | Retention time (RT) (min) [9] | LRIsb [10] | Content | | | | | | | | | | |
| Aboveground [9] | Underground [9] | Flower [10] | | | Leaf [10] | | | Root [10] | | |
| Tibet | Yunnan | Qinghai | Tibet | Yunnan | Qinghai | Tibet | Yunnan | Qinghai |
|  | Fatty acids (FAs) (9, 8, 4) |  |  |  |  | 68.9 | 65.41 | 20.22 | 29.47 | 38.66 | 13.66 | 22.74 | 27.3 | 17.71 | 44.81 | 46.27 |
| f1 | Hexanoic acid (6:0) | 142-62-1 | 990, 1846 | 4.21 | - | 0.36 | - | - | - | - | - | - | - | - | - | - |
| f2 | Caprylic acid (8:0) | 124-07-2 | 1180, 2060 | 5.4 | - | 0.8 | - | - | - | - | - | - | - | - | - | - |
| f3 | Dodecanoic acid (12:0) | 143-07-7 | 1568, 2497 | 8.89 | - | 0.37 | 0.78 | - | - | - | - | - | - | - | - | - |
| f4 | **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 |
| f5 | Pentadecanoic acid (15:0) | 1002-84-2 | 1867, 2822 | 12.81 | - | 1.26 | 0.83 | - | - | - | - | - | - | - | - | - |
| f6 | 9-Hexadecenoic acid (16:1, n-7) | 2091-29-4 | 1942, 2954 | 14.6 | - | 6.2 | 4.35 | - | - | - | - | - | - | - | - | - |
| f7 | **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 |
| f8 | **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 |
| f9 | 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 |
|  | Alcohol Monoterpenes (AMs) (1) |  |  |  |  |  |  | 0 | 0 | 0 | 0.18 | 0 | 0 | 0 | 0 | 0 |
| am1 | Linalool | 78-70-6 | 1099, 1547 | - | 1103 | - | - | nd | nd | nd | 0.18 | nd | nd | nd | nd | nd |
|  | C18-norditerpenoids (1, 0, 1) |  |  |  |  | - | - | 0.49 | 0.54 | 0.55 | 0.91 | 0.73 | 0.81 | nd | nd | nd |
| nd1 | Hexahydrofarnesyl acetone | 502-69-2 | 1844, 2131 | - | 1853 | - | - | 0.49 | 0.54 | 0.55 | 0.91 | 0.73 | 0.81 | nd | nd | nd |
|  | Alcohol diterpenes (ADs) (1, 0, 1) |  |  |  |  |  |  | 0 | 0.64 | 0.22 | 2.1 | 1.56 | 1.43 | 0 | 0 | 0.64 |
| ad1 | Phytol | 150-86-7 | 2114, 2622 | - | - | - | - | nd | 0.64 | 0.22 | 2.1 | 1.56 | 1.43 | nd | nd | nd |
|  | Alkanes (Als) (22, 0, 22) |  |  |  |  |  |  | 37.8 | 21.2 | 19.79 | 29.41 | 19.17 | 16.35 | 31.32 | 4.98 | 4.6 |
| a1 | n-Undecane | 1120-21-4 | 1100, 1100 | - | 1103 | - | - | nd | 0.52 | tr | nd | 0.25 | 0.61 | nd | 0.43 | 0.48 |
| a2 | Dodecane | 112-40-3 | 1200, 1200 | - | 1202 |  |  | nd | 0.1 | tr | nd | tr | tr | nd | 0.11 | 0.12 |
| a3 | *n*-Tetradecane | 629-59-4 | 1400, 1400 | - | 1401 | - | - | 1.16 | 0.14 | 0.15 | nd | 0.41 | 0.19 | 2 | 0.8 | 0.25 |
| a4 | *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 |
| a5 | *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 |
| a6 | *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 |
| a7 | *n*-Octadecane | 593-45-3 | 1800, 1800 | - | 1804 | - | - | 2.24 | nd | nd | 1.57 | nd | nd | 4.93 | tr | tr |
| a8 | *n*-Nonadecane | 629-92-5 | 1900, 1900 | - | - | - | - | 1.87 | 0.18 | 0.13 | 1.6 | 0.13 | 0.1 | 1.58 | nd | nd |
| a9 | *n*-Eicosane | 112-95-8 | 2000, 2000 | - | 2000 | - | - | 0.75 | nd | nd | 0.57 | nd | nd | 1.5 | nd | nd |
| a10 | *n*-Heneicosane | 629-94-7 | 2100, 2100 | - | - | - | - | nd | nd | nd | nd | nd | nd | 0.74 | nd | nd |
| a11 | *n*-Docosane | 629-97-0 | 2200, 2200 | - | - | - | - | 0.42 | nd | nd | nd | nd | nd | nd | nd | nd |
| a12 | *n*-Tricosane | 638-67-5 | 2300, 2300 | - | - | - | - | 1.03 | 0.54 | nd | nd | 0.45 | nd | nd | 0.2 | nd |
| a13 | *n*-Tetracosane | 646-31-1 | 2400, 2400 | - | - | - | - | 0.78 | 0.44 | 0.3 | 0.6 | 0.37 | 0.19 | nd | nd | 0.11 |
| a14 | *n*-Pentacosane | 629-99-2 | 2500, 2500 | - | - | - | - | 1.72 | 1.07 | 0.76 | 0.86 | 0.29 | nd | nd | nd | 0.13 |
| a15 | *n*-Hexacosane | 630-01-3 | 2600, 2600 | - | - | - | - | 0.63 | 0.59 | 0.5 | 0.67 | 0.44 | nd | nd | nd | 0.16 |
| a16 | n-Heptacosane | 593-49-7 | 2700, 2700 | - | - | - | - | 2.82 | 2.50 | 2 | 0.98 | 0.53 | 0.49 | nd | nd | tr |
| a17 | n-Octacosane | 630-02-4 | 2800, 2800 | - | - | - | - | 0.84 | 0.53 | 0.5 | 0.48 | 0.39 | nd | nd | nd | nd |
| a18 | n-Nonacosane | 630-03-5 | 2900, 2900 | - | - | - | - | 4.33 | 4.77 | 4.8 | 3.29 | 2.86 | 2.33 | nd | nd | nd |
| a19 | n-Triacontane | 638-68-6 | 3000, 3000 | - | - | - | - | 0.8 | nd | nd | 0.83 | nd | nd | nd | nd | nd |
| a20 | n-Hentriacontane | 630-04-6 | 3100, 3100 | - | - | - | - | 4.08 | 6.73 | 7.76 | 7.18 | 8.58 | 8.45 | nd | nd | 0.45 |
| a21 | n-Dotriacontane | 544-85-4 | 3200, 3200 | - | - | - | - | nd | nd | nd | 0.74 | nd | nd | nd | nd | nd |
| a22 | n-Tritriacontane | 630-05-7 | 3300, 3300 | - | - | - | - | 3.04 | 1.37 | 2.18 | 5.08 | 0.93 | 2.34 | nd | nd | 1.25 |
|  | Others (10, 2, 8) |  |  |  |  | 0.16 | 0.76 | 0.67 | 3.98 | 3.39 | 4.24 | 4.16 | 3.34 | 2.32 | 1.87 | 2.37 |
| o1 | *α*-Pinene | 80-56-8 | 937, 1028 | - | 940 | - | - | 0.22 | nd | nd | 0.23 | nd | nd | nd | nd | nd |
| o2 | 2-hydroxy-benzaldehyde | 90-02-8 | 1047, 1672 | 3.71 | - | - | 0.76 | - | - | - | - | - | - | - | - | - |
| o3 | Benzeneethanol | 60-12-8 | 1116, 1906 | - | 1120 | - | - | nd | nd | nd | 0.15 | nd | nd | nd | nd | nd |
| o4 | Naphthalene | 91-20-3 | 1182, 1745 | - | 1195 | - | - | tr | nd | nd | tr | nd | nd | nd | nd | nd |
| o5 | 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 |
| o6 | 1-Tridecanol | 112-70-9 | 1577, 2074 | - | 1582 | - | - | nd | nd | nd | 0.51 | nd | nd | nd | nd | nd |
| o7 | Cedrol | 77-53-2 | 1598, 2116 | 7.25 | - | 0.16 | - | - | - | - | - | - | - | - | - | - |
| o8 | Diisobutyl adipate | 141-04-8 | 1695, 2126 | - | 1690 | - | - | 0.45 | nd | nd | 0.66 | nd | nd | nd | nd | nd |
| o9 | 9-Octadecenamide | 3322-62-1 | 2334, - | - | - | - | - | nd | 1.12 | 1.14 | 0.28 | 0.14 | 1.67 | nd | 0.39 | 0.17 |
| o10 | Squalene | 111-02-4 | 2832, 2865 | - | - | - | - | nd | 0.77 | 0.29 | 0.56 | 1.16 | nd | nd | nd | nd |
|  | **Debated (37, 7, 30)** |  |  |  |  | 24.65 | 29.3 | 36.92 | 41.14 | 35.89 | 44.94 | 48.13 | 48.65 | 46.66 | 46.36 | 45.46 |
| d1 | Hydroxyproline | 51-35-4 | -, - | 11.07 | - | 4.63 | - | - | - | - | - | - | - | - | - | - |
| d2 | Cyclohexenylacetic acid | - | -, - | - | - | - | - | 2.41 | 4.07 | 3.36 | nd | tr | tr | nd | nd | nd |
| d3 | 12-methyl-tetradecanoic acid | 5502-94-3 | -, - | 12.38 | - | 0.46 | 0.19 | - | - | - | - | - | - | - | - | - |
| d4 | 14-Pentadecenoic acid (15:1, n-1) | 17351-34-7 | -, - | 12.98 | - | 3.21 | 2.60 | - | - | - | - | - | - | - | - | - |
| d5 | Oleic acid (18:1, n-9) | 112-80-1 | 2141, 3173 | 17.4 | - | 13.44 | 11.05 | - | - | - | - | - | - | - | - | - |
| d6 | 7-Methyl-cyclopentapyran-4-carboxylic acid methylester | - | -, - | - | 1611 | - | - | nd | nd | nd | 0.53 | nd | nd | nd | nd | nd |
| d7 | Methyl linolenate | 301-00-8 | 2098, 2571 | - | - | - | - | 11.9 | 10.63 | 8.77 | 11.19 | 11.55 | 18.23 | 18.38 | 20.8 | 17.31 |
| d8 | Ethyl linoleate | 544-35-4 | 2162, 2521 | 18.48 | - | 1.7 | 14.36 | - | - | - | - | - | - | - | - | - |
| d9 | Glyceryl monostearate | - | -, - | - | - | - | - | 0.33 | nd | nd | nd | nd | nd | nd | nd | nd |
| d10 | *n*-Octane | 111-65-9 | 800, 800 | - | 818 | - | - | nd | 0.13 | tr | 0.47 | 0.11 | 0.16 | nd | 0.22 | 0.12 |
| d11 | Dimethyl heptane | - | -, - | - | 837 | - | - | nd | tr | nd | nd | tr | tr | nd | 0.18 | tr |
| d12 | Dimethyl nonane | - | -, - | - | 1029 | - | - | nd | tr | nd | nd | tr | tr | nd | 0.12 | 0.12 |
| d13 | Methyl decane | - | -, - | - | 1038 | - | - | nd | tr | nd | nd | tr | tr | nd | 0.1 | tr |
| d14 | Dimethyldecane | - | -, - | - | 1062 | - | - | nd | 0.34 | tr | 0.12 | 0.3 | 0.36 | nd | 0.5 | 0.44 |
| d15 | Dimethylundecane | - | -, - | - | 1231 | - | - | nd | 0.24 | tr | nd | 0.17 | 0.24 | nd | 0.3 | 0.27 |
| d16 | Methyldodecane | - | -, - | - | 1283 | - | - | nd | 0.36 | 0.12 | nd | 0.32 | 0.33 | nd | 0.46 | 0.42 |
| d17 | Dimethyldodecane | - | -, - | - | 1284 | - | - | 0.19 | 0.78 | 0.2 | 0.47 | 0.85 | 0.73 | nd | 0.97 | 0.91 |
| d18 | Trimethyldodecane | - | -, - | - | 1348 | - | - | nd | 0.57 | 0.11 | 0.34 | 0.51 | 0.53 | nd | 0.66 | 0.20 |
| d19 | Trimethyltetradecane | - | -, - | - | 1548 | - | - | nd | 0.58 | 0.27 | 0.51 | 0.43 | 0.55 | nd | 0.81 | 0.67 |
| d20 | Trimethylpentadecane | - | -, - | - | 1719 | - | - | nd | 0.55 | 0.35 | 0.61 | 0.67 | 0.56 | nd | 0.68 | 0.63 |
| d21 | Tetramethylhexadecane | - | -, - | - | 1758 | - | - | tr | 0.62 | 0.44 | 0.45 | 0.41 | 0.9 | nd | 0.47 | 0.41 |
| d22 | Trimethyloctadecane | - | -, - | - | 1934 | - | - | 0.65 | 1.15 | 1.03 | 0.95 | 1.41 | 1.01 | 0.55 | 1.28 | 1.19 |
| d23 | Dimethyl heptene | - | -, - | - | 857 | - | - | nd | 0.12 | tr | nd | 0.1 | 0.13 | nd | 0.37 | 0.19 |
| d24 | Butyloctanol | - | -, - | - | 1083 | - | - | nd | 0.24 | tr | tr | 0.2 | 0.23 | nd | 0.28 | 0.26 |
| d25 | Dimethyl decene | - | -, - | - | 1105 | - | - | nd | 0.23 | tr | nd | 0.18 | 0.23 | nd | 0.39 | 0.34 |
| d26 | Tetramethyl-4-piperidone | - | -, - | - | 1124 | - | - | nd | nd | nd | 0.14 | nd | nd | nd | nd | nd |
| d27 | 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 |
| d28 | 2-Hexyl-1-octanol | 19780-79-1 | -, 2116 | - | 1334 | - | - | nd | 0.23 | tr | nd | 0.25 | 0.20 | nd | 0.26 | 0.28 |
| d29 | 2-Hexyl-1-octanol | 19780-79-1 | -, 2116 | - | 1544 | - | - | nd | 0.18 | tr | nd | 0.2 | 0.17 | 0.28 | 0.21 | 0.21 |
| d30 | Isocaryophyllene | 118-65-0 | 1406, 1587 | - | 1442 | - | - | 0.2 | 0.2 | tr | 0.18 | tr | nd | nd | nd | nd |
| d31 | Hexahydrofarnesol | 6750-34-1 | 1571, - | - | 1683 | - | - | nd | nd | nd | 0.41 | nd | nd | nd | nd | nd |
| d32 | Trimethylpentadecan-2-ol | - | -, - | - | 1847 | - | - | 1.79 | 2.85 | 1.86 | 7.5 | 6.35 | 5.06 | nd | tr | nd |
| d33 | Trimethylpentadecan-1-ol | - | -, - | - | 1890 | - | - | nd | 1.32 | 0.93 | 3.34 | 2.89 | 2.33 | 3.78 | tr | nd |
| d34 | Dibutyl phthalate | 84-74-2 | 1965, 2680 | 12.02 | - | 0.78 | 0.48 | - | - | - | - | - | - | - | - | - |
| d35 | 9,17-Octadecadienol | - | -, - | 12.2 | - | 0.43 | 0.62 | - | - | - | - | - | - | - | - | - |
| d36 | Campesterol | 474-62-4 | 3131, - | - | - | - | - | 2.82 | 1.73 | 1.89 | 2.69 | 2.92 | 1.28 | 8.83 | 3.92 | 4.56 |
| d37 | *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 |

Note:

The symbol "-" indicates that there is no relevant information available.

LRIsa and LRIsc were obtained using a semi-standard apolar column and a polar column, respectively, from the National Institute of Standards and Technology 17 library. LRIsb were calculated relative to C8-C20 *n*-alkanes on an HP-5 column [10]. RT was obtained from the AT-WAX column (30 m × 0.25 mm × 0.25 µm) [9].

"tr" indicates trace quantities (<0.1%). "nd" indicates that the compound was not detected.

The symbols in brackets after each FAs represent the number of carbon atoms in the fatty carboxyl chain and the number of double bonds. The "n-" designation indicates the location of the double bond nearest the methyl terminus.

The numbers in brackets for each type of compound represent the total number, the number found in reference [9], and the number found in reference [10], respectively.

The three compounds denoted in bold were detected in both references [9-10].

The “9-Hexadecenoic acid” has been deduced to be “9*E*-Hexadecenoic acid”. The identification of the compounds labeled as "debated" is open to discussion [9-10].

**Supplemental Table 3.** The AOAs data of each method.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Samples | Methods | | | | | | | | |
| DPPH | | | | ABTS | | | 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 | 0.04 |
| 80 | 0.187±0.002 | 3.93% | 0.213±0.002 | 5.60% | 0.101±0.003 | 0.024 |
| 110 | 0.186±0.003 | 4.44% | 0.212±0.003 | 6.34% | 0.097±0.001 | 0.023 |
| 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 | 0.02 |
| 80 | 0.192±0.003 | 1.37% | 0.222±0.009 | 1.62% | 0.076±0.001 | 0.02 |
| 110 | 0.191±0.001 | 1.88% | 0.223±0.002 | 1.47% | 0.077±0.001 | 0.02 |
| 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 | 0.021 |
| 80 | 0.198±0.001 | -1.54% | 0.224±0.001 | 0.74% | 0.092±0.002 | 0.022 |
| 110 | 0.197±0.001 | -0.85% | 0.22±0.001 | 2.51% | 0.108±0.001 | 0.025 |
| C8 (μg·mL–1) | 50 | 0.193±0.002 | 1.03% | ND | 0.216±0.021 | 4.57% | ND | 0.089±0.003 | 0.022 |
| 80 | 0.196±0.002 | -0.68% | 0.23±0.002 | -1.92% | 0.104±0.003 | 0.024 |
| 110 | 0.194±0.003 | 0.68% | 0.227±0.001 | -0.59% | 0.118±0.002 | 0.027 |
| C9 (μg·mL–1) | 50 | 0.194±0.001 | 0.34% | ND | 0.231±0 | -2.21% | ND | 0.088±0.001 | 0.022 |
| 80 | 0.196±0.001 | -0.68% | 0.23±0.002 | -1.62% | 0.104±0.003 | 0.024 |
| 110 | 0.193±0.003 | 1.03% | 0.228±0.005 | -1.03% | 0.103±0.002 | 0.024 |
| C10 (μg·mL–1) | 50 | 0.188±0.002 | 3.76% | ND | 0.222±0.002 | 1.62% | ND | 0.083±0.002 | 0.021 |
| 80 | 0.191±0.001 | 1.88% | 0.222±0.002 | 1.62% | 0.1±0.001 | 0.024 |
| 110 | 0.186±0.002 | 4.79% | 0.223±0.001 | 1.33% | 0.117±0.003 | 0.027 |
| 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 | 0.021 |
| 80 | 0.187±0.001 | 3.93% | 0.202±0.001 | 10.47% | 0.091±0.002 | 0.022 |
| 110 | 0.184±0.001 | 5.81% | 0.192±0.007 | 15.19% | 0.099±0.001 | 0.023 |
| 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 | 0.020 |
| 80 | 0.194±0.003 | 0.51% | 0.219±0.003 | 2.95% | 0.082±0.001 | 0.021 |
| 110 | 0.195±0.002 | 0.00% | 0.215±0.003 | 4.87% | 0.074±0.008 | 0.019 |
| 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 | 0.022 |
| 80 | 0.176±0.004 | 9.74% | 0.188±0.004 | 16.96% | 0.117±0.002 | 0.027 |
| 110 | 0.166±0.004 | 14.70% | 0.172±0.004 | 23.89% | 0.129±0.002 | 0.028 |
| PA (μmol·L–1) | 100 | 0.134±0.019 | 9.46% | ND | 0.265±0.03 | 8.82% | ND | 0.057±0.002 | 0.017 |
| 200 | 0.156±0.002 | -5.18% | 0.292±0.002 | -0.23% | 0.061±0.008 | 0.017 |
| 400 | 0.155±0.003 | -4.51% | 0.29±0.004 | 0.23% | 0.075±0.012 | 0.019 |
| MA (μmol·L–1) | 100 | 0.158±0.008 | -6.53% | ND | 0.291±0.01 | 0.00% | ND | 0.057±0.001 | 0.016 |
| 200 | 0.156±0.003 | -5.18% | 0.295±0.01 | -1.26% | 0.056±0.002 | 0.016 |
| 400 | 0.148±0.006 | -0.23% | 0.284±0.01 | 2.41% | 0.056±0.018 | 0.016 |
| OA (μmol·L–1) | 100 | 0.146±0.001 | 1.58% | ND | 0.286±0.001 | 1.60% | ND | 0.06±0.009 | 0.017 |
| 200 | 0.154±0 | -4.05% | 0.287±0 | 1.37% | 0.064±0.005 | 0.018 |
| 400 | 0.155±0.001 | -4.51% | 0.298±0.005 | -2.29% | 0.121±0.019 | 0.027 |
| 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 | 0.214 |
| 600 | 0.12±0.001 | -0.28% | 0.297±0.008 | 12.03% | 0.846±0.065 | 0.148 |
| 1200 | 0.112±0.004 | 6.39% | 0.269±0.003 | 20.41% | 0.454±0.021 | 0.083 |
| LA (μmol·L–1) | 100 | 0.156±0.003 | -5.63% | ND | 0.295±0.005 | -1.37% | ND | 0.055±0.001 | 0.016 |
| 200 | 0.156±0.004 | -5.18% | 0.302±0.003 | -3.67% | 0.066±0.003 | 0.018 |
| 400 | 0.148±0.002 | -0.23% | 0.285±0.001 | 2.06% | 0.075±0.019 | 0.02 |
| 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 | 0.233 |
| 600 | 0.088±0 | 26.67% | 0.175±0.004 | 48.13% | 0.899±0.108 | 0.157 |
| 1200 | 0.078±0.001 | 35.00% | 0.157±0.007 | 53.65% | 0.81±0.08 | 0.142 |
| 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 | 0.132 |
| 200 | 0.079±0.004 | 46.62% | 0.05±0.001 | 82.82% | 1.173±0.17 | 0.203 |
| 400 | 0.065±0.001 | 55.86% | 0.05±0.001 | 82.82% | 1.623±0.348 | 0.277 |
| 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 | 0.02 |
| 10 | 0.115±0.004 | 22.07% | 0.285±0.026 | 2.06% | 0.105±0.008 | 0.025 |
| 15 | 0.078±0.005 | 47.30% | 0.265±0.002 | 8.93% | 0.145±0.017 | 0.031 |

Note: OD refers to optical density and is expressed as mean ± standard deviation (n=3). RSA represents radical scavenging activity, and ND indicates that the value was not determined.