Supplemental Table 1. Number of reported chemicals and bioactive compounds found in *Beta vulgaris var. cicla and flavescens* according to categories and plant’s parts.

|  |  |  |  |
| --- | --- | --- | --- |
| Categories | Total reported compounds | Percentage of total includedcompounds | Studied part of the plant (number of papers reporting) |
| Leaves | Stems | Stalks | Petioles | Seeds | Roots | Tissue | NR |
| Ql | Qn | Ql | Qn | Ql | Qn | Ql | Qn | Ql | Qn | Ql | Qn | Ql | Qn | Ql | Qn |
| Alcohols | 1 | 0.5 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Aldehydes | 3 | 1.6 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Alkanes | 5 | 2.6 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Anthocyanins | 1 | 0.5 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Ash | 1 | 0.5 | 1 | 1 |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |   |
| Betalains | 38 | 19.9 | 1 |   |   |   |   |   | 2 | 2 |   |   |   |   |   |   |   |   |
| Carbohydrates, soluble sugars and total polyols | 14 | 7.3 | 1 | 1 |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |   |
| Carboxylic Acids | 6 | 3.1 | 1 | 1 |   |   |   |   |   |   | 1 |   |   |   |   |   |   |   |
| Carotenoids | 4 | 2.1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   | 1 | 1 | 1 |   |
| Enzymes | 2 | 1 | 2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Fat, lipids, fatty acids and fatty related compounds | 30 | 15.7 | 2 | 1 |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |   |
| Fibres | 3 | 1.6 | 1 | 1 |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |   |
| Flavonoids and derivates | 22 | 11.5 | 8 | 5 | 1 | 1 |   |   |   |   | 1 | 1 | 1 | 1 | 1 | 1 | 1 |   |
| Heterocyclics | 1 | 0.5 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Ketones | 3 | 1.6 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Minerals/Trace elements/Metals | 11 | 5.8 | 7 | 7 |   |   | 1 | 1 | 1 | 1 |   |   |   |   | 1 | 1 | 1 |   |
| Non flavonoids phenols/phenolics | 21 | 11 | 7 | 6 | 1 | 1 |   |   |   |   | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Pigments | 3 | 3 | 4 | 3 |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |   |
| Proteins | 2 | 1 | 3 | 3 |   |   |   |   |   |   |   |   |   |   | 1 | 1 |   |   |
| Tannins | 1 | 0.5 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Terpenes | 16 | 8.4 | 2 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Vitamins | 1 | 0.5 | 6 | 6 |   |   | 1 | 1 |   |   |   |   |   |   | 1 | 1 |  1 | 1  |
| Others | 2 | 1 | 1 | 1 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

Supplemental Table 2. Nutrients and phytochemicals compounds and their biological activity reported in *Beta vulgaris var. cicla and flavescen*s

| **No** | **PubChem****CID** | **Compound name** | **Variety - cultivar** | **Plant’s part** | **Author, publication year** | **Biological Activity** | **Author, publ. year of Biological activity** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alcohols (1) |
|  |  |  |  |  |  |  |  |
| 1 | 1254 | Menthol  | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Aldehydes (3) |
|  |  |  |  |  |  |  |  |
| 2 | 240 | Benzaldehyde | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 3 | 8175 | Decanal | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 4 | 31289 | Nonanal | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Alkanes (5) |
|  |  |  |  |  |  |  |  |
| 5 | 14257 | n-undecane | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 6 | 8182 | n-dodecane | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 7 | 12388 | n.tridecane | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 8 | 12389 | n-tetradecane | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 9 | 12391 | n-pentadecane | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Anthocyanins (1) |
|  |  |  |  |  |  |  |  |
| 10 |  | Total Anthocyanins Content | Cicla | Leaves | Sacan O. et al., 2010 |  |  |
|  |  |  |  |  |  |  |  |
| Ash (1) |
|  |  |  |  |  |  |  |  |
| 11 | NA | Ash | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Betalains (38) |
|  |  |  |  |  |  |  |  |
|  |  | *Betaxanthins (bx):* (26) |  |  |  |  |  |
| 12 | 135871118 | 3-methoxytyramine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 3-methoxytyramine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 13 | NI | Alanine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Alanine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 14 | NI | Asparagine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Asparagine-bx (vulgaxanthin III) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 15 | 135438592 | Aspartic acid-bx (miraxanthin II) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 16 | 135438589 | Dopamine-bx (dopaxanthin) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 17 | 135959620 | Dopamine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Dopamine-bx (miraxanthin V) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 18 | NI | Ethanolamine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 19 | NI | ᵞ-aminobutyric acid-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| ᵞ-aminobutyric acid-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 20 | 135438600 | Glutamic acid-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Glutamic acid-bx (vulgaxanthin II) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 21 | 135438599 | Glutamine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Glutamine-bx (vulgaxanthin I) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 22 | 135809744 | Glycine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Glycine-bx (portulacaxanthin III) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 23 | NI | Histamine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Histamine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 24 | 5281207 | Histidine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Histidine-bx (muscaaurin VII) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 25 | NI | Isoleucine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Isoleucine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 26 | NI | Leucine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Leucine-bx (vulgaxanthin IV) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 27 | NI | Lysine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 28 | NI | Methionine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 29 | NI | Phenylalanine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Phenylalanine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 30 | 57513848 | Proline-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Proline-bx (indicaxanthin) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 31 | NI | Serine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Serine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 32 | NI | Threonine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 33 | 136728070 | Tryptophan-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Tryptophan-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 34 | 135438593 | Tyramine-betaxhantine | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Tyramine-bx (miraxanthin III) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 35 | 135438597 | Tyrosine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Tyrosine-bx (portulacaxanthin II) | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 36 | NI | Valine-bx | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Valine-bx | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
| 37 | NA | Total Betaxanthins | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| Total Betaxanthins | Cicla – Bright Lights (Yellow) | Petioles | Kugler F. et al., 2007 |  |  |
|  |  | *Betacyanins:* (10) |  |  |  |  |  |
| 38 | 6324775 | Betacyanin | Cicla  | Leaves | Ali B. et al, 2009 | Antioxidant activity | Escribano J. et al, 1998Cai Y. et al, 2003 |
| 39 | 135449343 | Betanidin | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 40 | NI | Betanidin-monoferuloyl-5-O-â-diglucoside | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 41 | 12300103 | Betanin | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 42 | 135612764 | Isobetanidin | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 43 | NI | Isobetanidin-monoferuloyl-5-O-â-diglucoside | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 44 | 6325438 | Isobetanin | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 45 | NI | Isolampranthin II | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 46 | 11953909 | Lampranthin II | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 47 | 101056997 | Phyllocactin | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 48 | NA | Total Betacyanins | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
| 49 | NA | Total Betalains | Cicla – Bright Lights (4 different colours) | Petioles | Kugler F. et al., 2004 |  |  |
|  |  |  |  |  |  |  |  |
| Carbohydrates, soluble sugars and total polyols (14) |
|  |  |  |  |  |  |  |  |
| 50 | 439195 | Arabinose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 51 | 5984 | Fructose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 52 | 6036 | Galactose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 53 | 5793 | Glucose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 54 | 892 | Inositol | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 55 | 6251 | Mannitol | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 56 | 439242 | Raffinose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 57 | 25310 | Rhamnose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 58 | 5988 | Sucrose | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 59 | NA | Total polyols | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 60 | NA | Total soluble sugars  | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 61 | NA | Sum of sugars | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 62 | NA | Total sugars content | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 63 | NA | Total carbohydrates | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Total available carbohydrates | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Carboxylic Acids (6) |
|  |  |  |  |  |  |  |  |
| 64 | 6430689 | Exo-fenchyl acetate | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 65 | 10430 | Isovaleric acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 66 | 8091 | Methyl octanoate | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 67 | 5352115 | N-transferuloyl 3-O-methyldopamine | Cicla | Seeds | Kim Y. et al., 2003 |  |  |
| 68 | 5280537 | N-trans-feruloyl tyramine | Cicla | Seeds | Kim Y. et al., 2003 |  |  |
| 69 | 379 | Octanoic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Carotenoids (4) |
|  |  |  |  |  |  |  |  |
| 70 | 5280489 | β-carotene | Flavescens - Berac and Charlotte | Leaves | Reif C. et al, 2013 | Precursors of vitamin A, carotenoids are valuable Antioxidants.A high dietary intake and increased blood concentrations have been associated with adecrease in the risk of degenerative diseases such as cardiovascular diseases, specific types of cancer, age related macular degeneration and cataract formation. | Palozza and Krinsky, 1992 Granado et al., 2003; Finley,2005; Seifried et al., 2003; Tang et al., 2005b; Seddon et al., 1994; Brown et al., 1999; Chasan-Taber et al., 1999 |
| β-carotene | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Provides a vital role in the functioning of the visual system, and maintenance of cell function for growth and epithelial cellular integrity as well as production of red blood cells. | WHO, 2009 |
| β-carotene | Cicla | Leaves | Mzoughi Z. et al, 2019 | Carotenoids are the most effective singlet oxygen quenchers and can also scavenge peroxyl radicals |  |
| 71 | 5281243 | Lutein | Flavescens - Berac and Charlotte | Leaves | Reif C. et al, 2013 | Precursors of vitamin A, carotenoids are valuable Antioxidants.A high dietary intake and increased blood concentrations have been associated with adecrease in the risk of degenerative diseases such as cardiovascular diseases, specific types of cancer, age related macular degeneration and cataract formation. | Palozza and Krinsky, 1992 Granado et al., 2003; Finley,2005; Seifried et al., 2003; Tang et al., 2005b; Seddon et al., 1994; Brown et al., 1999; Chasan-Taber et al., 1999 |
| 72 | 446925 | Lycopene | Cicla | Leaves | Mzoughi Z. et al, 2019 | Carotenoids are the most effective singlet oxygen quenchers and can also scavenge peroxyl radicals |  |
| 73 | NA | Total carotenoid content | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Phytopigments improve immune, detoxication and antioxidant systems of the human body, thus indirectly helping the prevention of disease. | Fiedor and Burda, 2014; Ferruzzi and Blakeslee, 2007 |
|  |  |  |  |  |  |  |  |
| Enzymes (2) |
|  |  |  |  |  |  |  |  |
| 74 | NI | Catalase | Cicla  | Leaves  | Dinçler A. et al. 2001 | Protects cells from oxidative Damage by converting highly reactive oxygen species into oxygen and water | Fridovich, I. et al. 1986Galston, A.W et al. 1951 |
| 75 | NI | Polyphenol oxidase | Cicla - Red | Leaves  | Gao ZJ, et al. 2009 | Antiviral and antioxidant properties, as well as the protective effect against damage from ultraviolet radiation Potential involvement in the betalain biosynthetic pathway | Mayer A.M. et al. 2006Steiner U. et al. 1999 |
|  |  |  |  |  |  |  |  |
| Fat, Lipids, fatty acids and fatty related compounds (30) |
|  |  | *Fatty acids* (17) |  |  |  |  |  |
| 76 | 8892 | Caproic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 77 | 3893 | Lauric acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 78 | 11005 | Myristic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 79 | 13849 | Pentadecanoic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 80 | 985 | Palmitic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 81 | 445638 | Palmitoleic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 82 | 10465 | Margaric acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 83 | 5281 | Stearic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 84 | 445639 | Oleic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 | Important in nervous cell construction and fundamental role in cardiovascular diseases prevention |  |
| 85 | 5280450 | Linoleic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 86 | 5280934 | α-Linolenic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 87 | 10467 | Arachidic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 88 | 5282768 | Eicosenoic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 89 | 6439848 | Eicosadienoic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 90 | 8215 | Behenic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 91 | 17085 | Tricosanoic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 92 | 11197 | Lignoceric acid | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 93 | NA | Monounsaturated fatty acid (MUFA) | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 94 | NA | Polyunsaturated fatty acid (PUFA) | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 95 | NA | Saturated fatty acid (SFA) | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 96 | NA | Unsaturated/saturated ratio | Cicla | Leaves | Mzoughi Z. et al, 2019 | A significant unsaturated/saturated ratio (U/S) is regarded favourable for the reduction of serum cholesterol, atherosclerosis and prevention of heart diseases. |  |
|  |  | *Fatty related compounds* (3) |  |  |  |  |  |
| 97 | 28469 | 3-methyldodecane | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 98 | 5364475 | (E)-3-octen-1-ol | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 99 | 8050 | Methyl decanoate | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  | *Lipids* (5) |  |  |  |  |  |
| 100 | 6441487 | Phosphatidylcholine (PCH) | Cicla – Glatter Silber | Leaves | Zeller W. et al., 1977 |  |  |
| 101 | 46891780 | Phosphatidylethanolamine (PE) | Cicla – Glatter Silber | Leaves | Zeller W. et al., 1977 |  |  |
| 102 | 52927225 | Phosphatidylglycerol (PG) | Cicla – Glatter Silber | Leaves | Zeller W. et al., 1977 |  |  |
| 103 | NI | Digalactosyldiglyceride (DGG) | Cicla – Glatter Silber | Leaves | Zeller W. et al., 1977 |  |  |
| 104 | NI | Monogalactosyldiglyceride | Cicla – Glatter Silber | Leaves | Zeller W. et al., 1977 |  |  |
|  |  | *Fat* |  |  |  |  |  |
| 105 | NA | Total lipids | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Fat | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Fibres (3) |
|  |  |  |  |  |  |  |  |
| 106 | NA | Insoluble dietary fiber | Cicla | Leaves | Mzoughi Z. et al, 2019 | Promote the development and protects the beneficial intestinal Flora.Decrease the menace of cardiovascular and coronary heart diseases. | Barreira et al., 2017 |
| 107 | NA | Soluble dietary fiber | Cicla | Leaves | Mzoughi Z. et al, 2019 | Promote the development and protects the beneficial intestinal Flora.Decrease the menace of cardiovascular and coronary heart diseases. | Barreira et al., 2017 |
| 108 | NA | Crude fibers | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Togheter with protein enhances blood sugar regulation | Kolota et al., 2010; Ninfali and Angelino, 2013; Pyo et al., 2004; Sacan and Yanardag, 2010 |
| Total dietary fiber | Cicla | Leaves | Mzoughi Z. et al, 2019 | Promote the development and protects the beneficial intestinal Flora.Decrease the menace of cardiovascular and coronary heart diseases. | Barreira et al., 2017 |
|  |  |  |  |  |  |  |  |
| Flavonoids and derivates (22) |
|  |  |  |  |  |  |  |  |
| 109 | NI | 2''-Oxylopyranosylvitexin | Flavescens | Leaves | Hala M. et al., 2019 |  |  |
| 110 | NI | 6,8-di-C-β-D-glucopyranosylapigenin (vecinin-II) | Flavescens | Leaves | Hala M. et al., 2019 |  |  |
| 111 | NI | Acacetin 8-C-β-D-glucopyranoside | Flavescens | Leaves | Hala M. et al., 2019 |  |  |
| 112 | NI | Acacetin 8-C-α-L-rhamnoside | Flavescens | Leaves | Hala M. et al., 2019 |  |  |
| 113 | 9064 | (+) Catechin | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 114 | NI | Glucopyranosyl-glucopyrasyl-rhamnetin | Cicla  | Seeds  | Gennari L, et al. 2011 |  |  |
| 115 | NI | Glucopyranosyl-xylosyl-rhamnetin | Cicla  | Seeds  | Gennari L, et al. 2011 |  |  |
| 116 | 5488387 | Isorhamnetin 3-gentiobioside | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 | Antioxidant and free-radical scavenging activities, which play important roles in human nutrition. | Stähelin et al., 1991a,b |
| Isorhamnetin 3-gentiobioside | Cicla  | Leaves | Ninfali P. et al., 2007 |  |  |
| 117 | 44258010 | Isorhamnetin 3-vicianoside | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 | Antioxidant and free-radical scavenging activities, which play important roles in human nutrition. | Stähelin et al., 1991a,b |
| 118 | 5280863 | Kaempferol | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 119 | 9960512 | Kaempferol 3-gentiobioside | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 | Antioxidant and free-radical scavenging activities, which play important roles in human nutrition. | Stähelin et al., 1991a,b |
| 120 | 5281672 | Myricetin | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 121 | 5280343 | Quercetin | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 122 | 5280805 | Rutin | Cicla | Leaves | Ninfali P. et al., 2007 |  |  |
| 123 | 5280441 | Apigenin 8-C-β-D-glucopyranoside (vitexin) | Flavescens | Leaves | Hala M. et al., 2019 | Promising antibacterial activity against most of the test bacterial strains. |  |
| 124 | 5280641 | Vitexin 2"-O-β-D-glucopyranoside | Cicla | Leaves  | Kim I. et al., 2004 | Hepatoprotective activity |  |
| 125 | 5282151 | Vitexin 2''-O-rhamnoside | Cicla | Leaves | Ninfali P. et al., 2007 |  |  |
| 126 | 441381 | Vitexin 7-O-β-D-glucopyranoside | Cicla | Leaves  | Kim I. et al., 2004 | Hepatoprotective activity |  |
| 127 | 101406315 | 2”-xylosylvitexin | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 | Antioxidant and free-radical scavenging activities, which play important roles in human nutrition. | Stähelin et al., 1991a,b |
| Xylosylvitexin | Cicla  | Seeds  | Gennari L, et al. 2011 |  |  |
| 2''-O-Xylosylvitexin | Cicla | Leaves | Ninfali P. et al., 2007 |  |  |
| 128 | 44257736 | 6"-Malonyl-2"-xylosyl vitexin | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 | Antioxidant and free-radical scavenging activities, which play important roles in human nutrition. | Stähelin et al., 1991a,b |
| 129 | NA | Total flavonoid content | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 |  |  |
| Flavonoid content | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| Total flavonoids | Cicla | Leaves | Sacan O. et al., 2010 |  |  |
| Total flavonoids | Cicla | Leaves, roots and seeds | Ninfali P. et al., 2013 | BVc is a rich source of flavonoid glycosides derived from apigenin, namely vitexin, vitexin-2-O-rhamnoside (VOR), vitexin-2-O-xyloside (VOX). These flavonoids are glycosides of the flavone apigenin, whose antitumor effects have been widely studied.  | Plaumann et al., 1996Sato et al., 1994Lepley et al., 1997Yang et al., 2012Ninfali et al, 2007 |
| Flavonoids | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| Total flavonoid content | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | The consumption of vegetables that are rich in phenols and flavonoids is associated with preventions of diseases caused by oxidative stress. | Slavin and Lloyd, 2012; Ballistreri et al., 2013 |
| Total flavonoid content | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 130 | NA | Total flavonols content | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Heterocyclics (1) |
|  |  |  |  |  |  |  |  |
| 131 | 11116492 | Cis-linalool oxide (furanoid) | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Ketones (3) |
|  |  |  |  |  |  |  |  |
| 132 | 9862 | 6-methyl-5-hepten-2-one | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 133 | 7410 | Acetophenone | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 134 | 2537 | Camphor | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Minerals/Trace elements/Metals (11) |
|  |  |  |  |  |  |  |  |
| 135 | 5460341 | Ca | Cicla – 11 cultivars | Leaves and stalks | Pokluda R. et al., 2002 |  |  |
| Ca | Cicla - Lukullus | Leaves | Dzida K. et al, 2008 |  |  |
| Ca | Cicla - 5 cultivars | Leaves | Kolota E. et al, 2010 |  |  |
| Ca | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Ca | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| Ca | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Provides rigidity to the skeleton, and is vital in neuromuscular function, enzyme-mediated processes and blood clotting. | WHO, 2009 |
| Ca | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Ca | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 136 | 104730 | Co | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Trace elements have a crucial role in numerous enzyme reactions in which they generally participate as cofactors. | Fraga, 2005 |
| 137 | 23976 | Cr  | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Trace elements have a crucial role in numerous enzyme reactions in which they generally participate as cofactors. | Fraga, 2005 |
| 138 | 23978 | Cu | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Cu | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 |  |  |
| Cu | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Trace elements have a crucial role in numerous enzyme reactions in which they generally participate as cofactors. | Fraga, 2005 |
| Cu  | Cicla | Leaves | Mzoughi Z. et al, 2019 | Major role in redox processes and are cofactors activating approximately 35 different enzymes |  |
| 139 | 23925 | Fe | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Fe | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Oxygen carrier from lungs to body tissues, a transport medium for electrons within cells and as an integral part of important enzyme systems such as cytochromes. | Wessling-Resnick, 2000 |
| Fe | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Trace elements have a crucial role in numerous enzyme reactions in which they generally participate as cofactors. | Fraga, 2005 |
| Fe | Cicla | Leaves | Mzoughi Z. et al, 2019 | Major role in redox processes and are cofactors activating approximately 35 different enzymes |  |
| 140 | 5462222 | K | Cicla – 11 cultivars | Leaves and stalks | Pokluda R. et al., 2002 |  |  |
| K | Cicla - Lukullus | Leaves | Dzida K. et al, 2008 |  |  |
| K | Cicla - 5 cultivars | Leaves | Kolota E. et al, 2010 |  |  |
| K | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| K | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| K | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 |  |  |
| K | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| K | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| Potassium | Cicla – Magenta sunset | Leaves | Singh H. et al, 2019 |  |  |
| 141 | 5462224 | Mg | Cicla – 11 cultivars | Leaves and stalks | Pokluda R. et al., 2002 |  |  |
| Mg | Cicla - Lukullus | Leaves | Dzida K. et al, 2008 |  |  |
| Mg | Cicla - 5 cultivars | Leaves | Kolota E. et al, 2010 |  |  |
| Mg | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Mg | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| Mg | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 |  |  |
| Mg | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Mg | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 142 | 23930 | Mn | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Mn | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 |  |  |
| Mn | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Trace elements have a crucial role in numerous enzyme reactions in which they generally participate as cofactors. | Fraga, 2005 |
| Mn | Cicla | Leaves | Mzoughi Z. et al, 2019 | Major role in redox processes and are cofactors activating approximately 35 different enzymes |  |
| 143 | 5360545 | Na | Cicla – 11 cultivars | Leaves and stalks | Pokluda R. et al., 2002 |  |  |
| Na | Cicla  | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Na | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 |  |  |
| Na | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Na | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 144 | 5462309 | P | Cicla - Lukullus | Leaves | Dzida K. et al, 2008 |  |  |
| P | Cicla - 5 cultivars | Leaves | Kolota E. et al, 2010 |  |  |
| P | Cicla | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| P | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| P | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 |  |  |
| P | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 |  |  |
| Phosphorus | Cicla – Magenta sunset | Leaves | Singh H. et al, 2019 |  |  |
| 145 | 23994 | Zn | Cicla | Leaves | Bozokalfa MK. et al., 2011 |  |  |
| Zn | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Plays an important role in more than 300 enzymes involved in synthesis and degradation of biomolecules, metabolism of other micronutrients as well as the immune system. | MacDonald, 2000 |
| Zn | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Trace elements have a crucial role in numerous enzyme reactions in which they generally participate as cofactors. | Fraga, 2005 |
| Zn  | Cicla | Leaves | Mzoughi Z. et al, 2019 | Major role in redox processes and are cofactors activating approximately 35 different enzymes |  |
|  |  |  |  |  |  |  |  |
| Non-flavonoids phenols/phenolics (21) |
|  |  |  |  |  |  |  |  |
| 146 | 643387 | 2,4,5-Trihydroxybenzaldehyde | Cicla  | Seeds  | Gennari L, et al. 2011 | Chemopreventive agent against human leukemia | Tseng et al., 2001 |
| 147 | 70949 | 2,5-Dihydroxybenzaldehyde | Cicla  | Seeds  | Gennari L, et al. 2011 |  |  |
| 148 | 689043 | Caffeic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| Caffeic acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| 149 | 1794427 | Chlorogenic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 150 | 445858 | Ferulic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| Ferulic acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| 151 | 370 | Gallic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 152 | NI | Myricitrin acid | Cicla | Leaves | Mzoughi Z. et al, 2019 | Responsible for the antioxidant capacity (potent redox properties) and several biological activities | Bennett et al., 2003; Bogucka-Kocka,Zidorn, Kasprzycka, Szymczak, & Szewczyk, 2016; Nouman et al.,2016 |
| 153 | 637542 | p-Coumaric acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| p-Coumaric acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| p-coumaric acid | Cicla | Leaves | Mzoughi Z. et al, 2019 | Responsible for the antioxidant capacity (potent redox properties) and several biological activities | Bennett et al., 2003; Bogucka-Kocka,Zidorn, Kasprzycka, Szymczak, & Szewczyk, 2016; Nouman et al.,2016 |
| 154 | NI | p-OH-benzoic | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 155 | 135 | p-Hydroxybenzoic acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| 156 | 72 | Protocatechuic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| Protocatechuic acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| 157 | NI | N-cis-feruloyl 3-O-methyldopamine | Cicla | Seeds | Kim Y. et al., 2003 |  |  |
| 158 | 6440659 | N-cis-feruloyl tyramine | Cicla | Seeds | Kim Y. et al., 2003 |  |  |
| 159 | 5281792 | Rosmarinic acid | Cicla | Leaves | Mzoughi Z. et al, 2019 | Responsible for the antioxidant capacity (potent redox properties) and several biological activities | Bennett et al., 2003; Bogucka-Kocka,Zidorn, Kasprzycka, Szymczak, & Szewczyk, 2016; Nouman et al.,2016 |
| 160 | 338 | Salicylic acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| 161 | 637775 | Sinapic acid | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| 162 | 10742 | Syringic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 163 | 8468 | Vanillic acid | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| Vanillic acid | Cicla  | Seeds  | Gennari L, et al. 2011 |  |  |
| 164 | NA | Total Phenolic acids | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| 165 | NA | Total orthodiphenols content | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 166 | NA | Total Phenolics content | Cicla – Large white ribbed and CXS 2550 | Leaves and stems | Pyo ZH. et al., 2004 |  |  |
| Total phenols | Cicla | Leaves | Ninfali P. et al., 2007 |  |  |
| Total polyphenols | Cicla  | Leaves | Ali B. et al, 2009 |  |  |
| Total phenolic compounds | Cicla  | Leaves | Sacan O. et al., 2010 |  |  |
| Total phenols | Cicla  | Seeds  | Gennari L, et al. 2011 |  |  |
| Total phenols | Cicla | Leaves, roots and seeds | Ninfali P. et al., 2013 |  |  |
| Total phenols | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| Total phenolics | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Phenolic compounds are also known to possess powerful radical scavenging properties against reactive oxygen species (ROS). | Stangeland et al., 2009 |
| Total phenol content | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | The consumption of vegetables that are rich in phenols and flavonoids is associated with preventions of diseases caused by oxidative stress. | Slavin and Lloyd, 2012; Ballistreri et al., 2013 |
| Total concentration of phenolics | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Pigments (3) |
|  |  |  |  |  |  |  |  |
| 167 | 6433192 | Chlorophyll a | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Phytopigments improve immune, detoxication and antioxidant systems of the human body, thus indirectly helping the prevention of disease. | Fiedor and Burda, 2014; Ferruzzi and Blakeslee, 2007 |
| Chlorophyll a | Cicla | Leaves | Mzoughi Z. et al, 2019 | Significant effects on oxidation, inflammation and wound healing.Reduces free radicals, protects lymphocytes against oxidative DNA damage by H2O2 and prevents lipid peroxidation of LDL (). | İnanç,2011 Hsu et al., 2013 |
| 168 | 6450186 | Chlorophyll b | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Phytopigments improve immune, detoxication and antioxidant systems of the human body, thus indirectly helping the prevention of disease. | Fiedor and Burda, 2014; Ferruzzi and Blakeslee, 2007 |
| Chlorophyll b  | Cicla | Leaves | Mzoughi Z. et al, 2019 | Significant effects on oxidation, inflammation and wound healing.Reduces free radicals, protects lymphocytes against oxidative DNA damage by H2O2 and prevents lipid peroxidation of LDL (). | İnanç,2011 Hsu et al., 2013 |
| 169 | 6449992 | Total chlorophyll | Cicla | Leaves | Ali B. et al, 2009 |  |  |
| Chlorophyll contents | Cicla – Bressanne | Leaves | Moreira MR. et al., 2003 |  |  |
| Chlorophyll | Cicla - Verde da taglio | Leaves  | Miceli A. et al., 2014 |  |  |
| Total chlorophylls  | Cicla | Leaves | Mzoughi Z. et al, 2019 | Significant effects on oxidation, inflammation and wound healing.Reduces free radicals, protects lymphocytes against oxidative DNA damage by H2O2 and prevents lipid peroxidation of LDL. | İnanç,2011 Hsu et al., 2013 |
|  |  |  |  |  |  |  |  |
| Proteins and aminoacides (2) |
|  |  |  |  |  |  |  |  |
| 170 | 614 | Proline | Cicla | Leaves | Sacan O. et al., 2010 | Is a intracellular nonenzymatic ROS scavenging molecule.Proline provides protecting against stress by maintaining redox homeostasis.Scavenges free radicals and ROS. | Xu et al., 2009Hoque et al., 2008 Sharma and Dietz, 2006 |
| 171 | NA | Protein | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| Protein | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Togheter with dietary fiber enhances blood sugar regulation | Kolota et al., 2010; Ninfali and Angelino, 2013; Pyo et al., 2004; Sacan and Yanardag, 2010 |
| Protein | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Tannins (1) |
|  |  |  |  |  |  |  |  |
| 172 | NA | Total tannins content | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Terpenes and derivates (16) |
|  |  |  |  |  |  |  |  |
| 173 | NI | 3-hydroxy-5α,6α-epoxy-β-ionone | Cicla | Leaves  | Kim I. et al., 2004 |  |  |
| 174 | 440968 | α-Pinene | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 175 | 17100 | α-Terpineol | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 176 | 111037 | α-terpinyl acetate | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 177 | 5281515 | β-caryophyllene | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 178 | 9895 | β-cyclocitral | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 179 | 14896 | β-Pinene  | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 180 | 7439 | Carvone | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 181 | 8842 | Citronellol | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 182 | 443181 | Cis-dihydrocarvone | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 183 | 688492 | (+)-Dehydrovomifoliol | Cicla | Leaves  | Kim I. et al., 2004 |  |  |
| 184 | 638014 | (E)-β-ionone | Cicla | Leaves  | Mzoughi Z. et al, 2019 |  |  |
| 185 | 637566 | Geraniol | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 186 | 22311 | Limonene | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 187 | 6549 | Linalool | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
| 188 | 29025 | Verbenone | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |
| Vitamins (1) |
|  |  |  |  |  |  |  |  |
| 189 | 54670067 | Vitamin C | Cicla – Green and Yellow | Leaves | Gil MI. et al., 1998 |  |  |
| Vitamin C | Cicla – 11 cultivars | Leaves | Pokluda R. et al., 2002 |  |  |
| Ascorbic acid | Cicla – Bressanne | Leaves | Moreira MR. et al., 2003 |  |  |
| Vitamin C | Cicla - Lukullus | Leaves | Dzida K. et al, 2008 |  |  |
| Vitamin C | Cicla - 5 cultivars | Leaves | Kolota E. et al, 2010 |  |  |
| Ascorbic acid | Cicla - Verde da taglio | Leaves  | Miceli A. et al., 2014 |  |  |
| Total ascorbic acid | Cicla - Agila | Leaves | Colonna E. et al, 2016 |  |  |
| Ascorbic acid  | Cicla - Fordhook Giant | Not specified | Moyo M. et al, 2018 | Electron donor for enzymes involved in collagen hydroxylation, carnitine biosynthesis and tyrosine metabolism, potent antioxidant.  | Prockop and Kivirikko, 1995 |
| Vitamin C | Cicla - Verca F1 hybrid | Tissue (leaves and stems) | Ivanovic L. et al, 2019 | Water-soluble vitamin which has a very powerful antioxidant capacity |  |
| 190 | 5284607 | Vitamin K1 (Phylloquinone) | Not reported | Not specified | Ferland G. et al, 1992 | In addition to its role in hemostasis, vitamin K is necessary for the synthesis of several proteins not involved in blood coagulation. |  |
|  |  |  |  |  |  |  |  |
| Other compounds (2) |
|  |  |  |  |  |  |  |  |
| 191 | 637563 | (E)-anethole | Cicla | Leaves | Mzoughi Z. et al, 2019 | Potent antimicrobial properties, against bacteria, yeast, and fungi. | De, De, Sen, &Banerjee, 2002 |
| 192 | 14485987 | Δ8,9-dehydro-4-hydroxythymol dimethylether | Cicla | Leaves | Mzoughi Z. et al, 2019 |  |  |
|  |  |  |  |  |  |  |  |