

Dr. Duke's Phytochemical and Ethnobotanical Databases

Chemicals found in Citrus paradisi

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Refernce Citation |
|------------------|----------------------|------------|---------|----------|-----------------------|------------------------------------|
| 23 | CITRIC-ACID | Fruit | 11900.0 | 21000.0 | -0.3079040401143372 | -- |
| 19 | D-LIMONENE | Fruit | 3410.0 | 9575.0 | | -- |
| 12 | NARINGIN | Pericarp | 2701.0 | 15595.0 | | -- |
| 15 | FIBER | Fruit | 2000.0 | 172000.0 | 0.28614824332305033 | -- |
| 14 | POTASSIUM | Fruit | 1300.0 | 46200.0 | 2.502343144222965 | -- |
| 5 | LIMONIN | Seed | 1188.0 | 1885.0 | | -- |
| 3 | ASPARTIC-ACID | Fruit | 810.0 | 4700.0 | -0.7171245699225177 | -- |
| 14 | ARGININE | Fruit | 470.0 | 760.0 | -0.9468544491143548 | -- |
| 13 | GERANIAL | Fruit | 420.0 | 700.0 | 1.029040358819024 | -- |
| 15 | MALIC-ACID | Fruit | 400.0 | 600.0 | -0.9127272216734706 | -- |
| 112 | ASCORBIC-ACID | Fruit | 337.0 | 3862.0 | -0.044361459552841695 | -- |
| 12 | NARINGIN | Fruit | 245.0 | 195000.0 | | -- |
| 8 | GLUTAMIC-ACID | Fruit | 220.0 | 2800.0 | -0.8122742603309042 | -- |
| 12 | NARINGIN | Seed | 200.0 | 2677.0 | | -- |
| 27 | LINOLEIC-ACID | Fruit | 190.0 | 2090.0 | -0.32591314054469284 | USDA's Ag Handbook 8 and sequelae) |
| 4 | LYSINE | Fruit | 160.0 | 1760.0 | -0.6097925666909821 | -- |
| 1 | SERINE | Fruit | 150.0 | 3100.0 | -0.19170709792847418 | -- |
| 13 | PALMITIC-ACID | Fruit | 120.0 | 1320.0 | -0.34498600170914256 | USDA's Ag Handbook 8 and sequelae) |
| 18 | OLEIC-ACID | Fruit | 120.0 | 1320.0 | -0.4705714791864392 | USDA's Ag Handbook 8 and sequelae) |
| 28 | CALCIUM | Fruit | 117.0 | 11000.0 | 1.6484860149222178 | -- |
| 22 | MYRCENE | Pericarp | 77.0 | 185.0 | | -- |
| 4 | PHOSPHORUS | Fruit | 76.0 | 5280.0 | 0.6269205475189703 | -- |
| 22 | MYRCENE | Fruit | 72.0 | 190.0 | -0.35491275646315373 | -- |
| 15 | ALPHA-LINOLENIC-ACID | Fruit | 50.0 | 550.0 | -0.9033936410418376 | USDA's Ag Handbook 8 and sequelae) |
| 102 | CAFFEIC-ACID | Fruit | 40.0 | 51.0 | -0.3294714675858169 | -- |
| 16 | LYCOPENE | Fruit | 30.0 | 336.0 | 0.05302712626772389 | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|--------------------|------------|---------|----------|----------------------|------------------------------------|
| 61 | FERULIC-ACID | Fruit | 25.0 | 35.0 | -0.5720775535473553 | -- |
| 61 | FERULIC-ACID | Pericarp | 25.0 | 160.0 | -1.0 | -- |
| 29 | TRYPTOPHAN | Fruit | 20.0 | 220.0 | -0.8847986548914832 | -- |
| 65 | MAGNESIUM | Fruit | 15.0 | 3300.0 | 0.5418998341350072 | -- |
| 5 | SABINENE | Pericarp | 13.0 | 26.0 | | -- |
| 28 | ALPHA-PINENE | Pericarp | 12.0 | 47.0 | | -- |
| 2 | PALMITOLEIC-ACID | Fruit | 10.0 | 110.0 | -0.32532624490387124 | USDA's Ag Handbook 8 and sequelae) |
| 8 | STEARIC-ACID | Fruit | 10.0 | 110.0 | -0.27192646640928014 | USDA's Ag Handbook 8 and sequelae) |
| 5 | LIMONIN | Plant | 9.0 | 140.0 | | -- |
| 14 | SULFUR | Fruit | 7.0 | 2090.0 | 0.4700861895135408 | -- |
| 5 | LIMONIN | Pericarp | 6.0 | 65.0 | -1.0 | -- |
| 25 | P-COUMARIC-ACID | Pericarp | 5.0 | 25.0 | -1.0 | -- |
| 13 | GERANIAL | Pericarp | 4.0 | 700.0 | | -- |
| 15 | METHIONINE | Fruit | 3.0 | 222.0 | -0.9069733792825451 | -- |
| 32 | ALPHA-TOCOPHEROL | Fruit | 3.0 | 29.0 | -0.6752411923996696 | -- |
| 5 | LIMONIN | Fruit | 3.0 | 477.0 | | -- |
| 11 | PANTOTHENIC-ACID | Plant | 3.0 | 31.0 | 0.07338228684128613 | -- |
| 9 | SINAPIC-ACID | Fruit | 2.0 | 5.0 | -1.4113126084211554 | -- |
| 9 | SINAPIC-ACID | Pericarp | 2.0 | 35.0 | -1.0 | -- |
| 39 | NIACIN | Fruit | 2.0 | 44.0 | -0.2232247949977374 | -- |
| 9 | TERPINOLENE | Pericarp | 1.0 | 11.0 | | -- |
| 5 | ALUMINUM | Fruit | 1.0 | 330.0 | -0.12751726414283882 | -- |
| 11 | ALPHA-PHELLANDRENE | Pericarp | 1.0 | 2.0 | | -- |
| 4 | BORON | Fruit | 1.0 | 33.0 | -0.13949053957899715 | -- |
| 6 | IRON | Fruit | 1.0 | 88.0 | -0.1784159005130795 | -- |
| 13 | BETA-PINENE | Pericarp | 0.7 | 2.0 | | -- |
| 4 | TIN | Fruit | 0.66 | 3.3 | -0.3642012762593144 | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|-----------------|------------|---------|----------|------------------------|--|
| 11 | GAMMA-TERPINENE | Pericarp | 0.4 | 1.0 | | -- |
| 2 | MOLYBDENUM | Fruit | 0.1 | 0.77 | -0.3309149921902472 | -- |
| 15 | LUTEIN | Fruit | 0.095 | 0.95 | -0.7527259978039551 | -- |
| 11 | LITHIUM | Fruit | 0.088 | 2.31 | 1.8670378728368338 | -- |
| 3 | NICKEL | Fruit | 0.04 | 7.7 | 1.5622677545774823 | -- |
| 2 | CRYPTOXANTHIN | Fruit | 0.03 | 0.3 | -0.636682262247135 | -- |
| 3 | SILVER | Fruit | 0.022 | 0.11 | -0.43140967622714665 | -- |
| 2 | COBALT | Fruit | 0.005 | 0.22 | -0.5084821806978201 | -- |
| 3 | CADMIUM | Fruit | 0.002 | 0.066 | -0.44965581051601666 | -- |
| 24 | CHROMIUM | Fruit | 0.002 | 0.55 | -0.43038124621628904 | -- |
| 2 | ARSENIC | Fruit | 0.001 | 4.4 | 5.101801784885793 | -- |
| 4 | NERAL | Fruit | 0.0 | 210.0 | 0.21477685159099982 | -- |
| 7 | SALICYLATES | Fruit | 0.0 | 70.0 | -0.13601954960792303 | -- |
| 15 | RIBOFLAVIN | Fruit | 0.0 | 5.0 | -0.0019916133753625524 | -- |
| 25 | P-COUMARIC-ACID | Fruit | 0.0 | 53.0 | -0.4886747256490017 | -- |
| 1 | MERCURY | Fruit | 0.0 | 0.001 | -0.7865389313824043 | -- |
| 1 | SODIUM | Fruit | 0.0 | 341.0 | -0.15161413942649452 | -- |
| 14 | MANGANESE | Fruit | 0.0 | 7.7 | -0.3527646944182478 | -- |
| 53 | BETA-CAROTENE | Fruit | 0.0 | 5.0 | -0.14113571921676207 | -- |
| 77 | ZINC | Fruit | 0.0 | 22.0 | -0.24975934398276664 | -- |
| 31 | THIAMIN | Fruit | 0.0 | 6.0 | 0.08541669233982067 | -- |
| 60 | SELENIUM | Fruit | 0.0 | 0.027 | -0.3794918743602091 | -- |
| 12 | COPPER | Fruit | 0.0 | 7.7 | -0.3984053050544054 | -- |
| 3 | SUBAPHYLLIN | Fruit | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 5 | GERANYL-ACETATE | Pericarp | | 5.0 | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|-----------------|------------|---------|----------|----------------------|---|
| 2 | CONIFERIN | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 2 | UNDECANAL | Pericarp | | | | -- |
| 15 | CITRONELLOL | Leaf | | 70.0 | -0.42686676977581944 | -- |
| 31 | HESPERIDIN | Fruit | | | | -- |
| 62 | CAFFEINE | Flower | | 29.0 | -1.3198240351921797 | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 2 | HUMULENE | Pericarp | | | | -- |
| 22 | UMBELLIFERONE | Fruit | | | | -- |
| 16 | P-CYMENE | Pericarp | | | | -- |
| 12 | STIGMASTEROL | Fruit | | 20.0 | -0.8951703667819086 | -- |
| 6 | NEOHESPERIDIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 13 | GERANIAL | Leaf | | 31.0 | -0.4010084489455154 | -- |
| 1 | CARVEOL | Pericarp | | | | -- |
| 8 | HESPERETIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 15 | OSTHOL | Root | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 8 | TYROSINE | Fruit | | 61.0 | -0.9769799928135696 | -- |
| 16 | P-CYMENE | Leaf | | 385.0 | -0.08025671568278799 | -- |
| 1 | NARIRUTIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 1 | CITROSTADIENOL | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 9 | TERPINOLENE | Leaf | | 28.0 | -0.19642611566435517 | -- |
| 4 | CADINENE | Pericarp | | | | -- |
| 12 | GLYCINE | Fruit | | | | -- |
| 5 | GERANYL-ACETATE | Leaf | | 10.0 | -1.0179833272400691 | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|-----------------|------------|---------|----------|----------------------|--|
| 2 | RHOIFOLIN | Leaf | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 11 | TYRAMINE | Fruit | | 0.0 | -1.414213562373095 | -- |
| 3 | NOOTKATONE | Pericarp | | 27.0 | | -- |
| 2 | ALPHA-HUMULENE | Pericarp | | 7.0 | | -- |
| 30 | ESCULETIN | Fruit | | | | -- |
| 7 | LINALYL-ACETATE | Fruit | | | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| 35 | GERANIOL | Pericarp | | 2.0 | | -- |
| 1 | QUINIC-ACID | Fruit | | | | -- |
| 23 | TERPINEN-4-OL | Pericarp | | 3.0 | | -- |
| 28 | ALPHA-PINENE | Fruit | | | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| 9 | OXALIC-ACID | Plant | | | | -- |
| 5 | NERYL-ACETATE | Pericarp | | 0.4 | | -- |
| 3 | MANNOSE | Fruit | | | | -- |
| 2 | ALPHA-HUMULENE | Leaf | | 29.0 | -0.41881559329428053 | -- |
| 10 | ERIODICTYOL | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | ELEMENE | Pericarp | | | | -- |
| 53 | CITRAL | Fruit | | | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| 13 | BETA-PINENE | Leaf | | 55.0 | -0.34800512476675877 | -- |
| 7 | GLUCOSE | Fruit | | 19500.0 | -0.6881467128834249 | -- |
| 47 | BETA-SITOSTEROL | Fruit | | 130.0 | -0.6234365080108808 | -- |
| 176 | QUERCETIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 23 | TERPINEN-4-OL | Leaf | | 305.0 | -0.1661703321057829 | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|---------------------|------------|---------|----------|---------------------|---|
| 4 | OSTHOLE | Root | | | | -- |
| 10 | NEROL | Pericarp | | 3.0 | | -- |
| 19 | D-LIMONENE | Plant | | 9000.0 | 1.999954303307047 | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| 2 | DODECANAL | Pericarp | | 0.7 | | -- |
| 3 | BETA-PHELLANDRENE | Pericarp | | | | -- |
| 5 | GERANYL-ACETATE | Fruit | | | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| 31 | CARYOPHYLLENE | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 4 | THREONINE | Fruit | | 100.0 | -1.2128642044978408 | -- |
| 2 | MARMIN | Pericarp | | | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 1 | MALONIC-ACID | Fruit | | | | -- |
| 2 | CITRONELLYL-ACETATE | Pericarp | | | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 2 | CYSTINE | Fruit | | 2.0 | -1.0736993666328245 | -- |
| 7 | ALPHA-CAROTENE | Fruit | | 0.0 | -0.5519699729560847 | -- |
| 56 | NARINGENIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 9 | DELTA-CADINENE | Pericarp | | 17.0 | | -- |
| 75 | KAEMPFEROL | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 1 | CHOLESTEROL | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 20 | CITRONELLAL | Pericarp | | | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|-----------------|------------|---------|----------|----------------------|---|
| 4 | SILICON | Fruit | | 2.0 | -0.6019449725946585 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 6 | BETA-BISABOLENE | Pericarp | | | | -- |
| 35 | GERANIOL | Plant | | | | -- |
| 2 | BERGAMOTTIN | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | OBACUNONE | Seed | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | CYCLOEUCALENOL | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | ALANINE | Fruit | | 90.0 | -1.4217792176532806 | -- |
| 1 | N-NONACOSANE | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 8 | DELTA-3-CARENE | Pericarp | | 0.0 | | -- |
| 11 | ISORHAMNETIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 7 | CHLORINE | Plant | | 6.0 | -1.4797990466255704 | -- |
| 32 | AESCULETIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | SESELIN | Root | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 23 | ALPHA-TERPINEOL | Pericarp | | 7.0 | | -- |
| 3 | XYLOSE | Fruit | | | | -- |
| 8 | PHLOROGLUCINOL | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 5 | SABINENE | Leaf | | 45.0 | -0.23253758249077405 | -- |
| 2 | NOMILIN | Seed | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 7 | CYCLOARTENOL | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|---------------------------------|------------|---------|----------|----------------------|--|
| 16 | ACETIC-ACID | Fruit | | | | Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952. |
| 1 | DECYL-ACETATE | Pericarp | | 0.4 | | -- |
| 22 | CATECHOL | Plant | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 2 | ALPHA-CRYPTOXANTHIN | Fruit | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 1 | N-METHYL-TYRAMINE | Fruit | | | | -- |
| 2 | GAMMA-CAROTENE | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 2 | ASPARAGINE | Fruit | | 420.0 | -0.6477225740518642 | -- |
| 1 | XANTHYLETIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 7 | PHENYLALANINE | Fruit | | | | -- |
| 2 | PHYTOSTEROLS | Fruit | | 170.0 | -0.9989014472088928 | Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.) |
| 23 | ALPHA-TERPINEOL | Leaf | | 29.0 | -0.5393424102140746 | -- |
| 14 | SUCROSE | Fruit | | 21400.0 | -0.5950841762317102 | -- |
| 3 | ISOPULEGOL | Pericarp | | 2.0 | | -- |
| 1 | 4',5,6,7,8-PENTAMETHOXY-FLAVONE | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 60 | LIMONENE | Leaf | | 205.0 | -0.23212407778841473 | -- |
| 2 | DECANOL | Pericarp | | 3.0 | | -- |
| 2 | HUMULENE | Fruit | | | | -- |

| Activities Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|------------------|----------------------------------|------------|---------|----------|----------------------|--|
| 2 | CAMPESTEROL | Fruit | | 20.0 | -0.48957181191497545 | -- |
| 2 | N-HEXACOSANE | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 8 | FRUCTOSE | Plant | | 12400.0 | | -- |
| 1 | XANTHOXYLETIN | Root | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 24 | PECTIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 5 | PHYLLOQUINONE | Fruit | | 0.001 | -0.23285139490462353 | -- |
| 13 | ALPHA-TERPINENE | Pericarp | | 1.0 | | -- |
| 3 | SUBAPHYLLIN | Leaf | | | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 2 | GERMACRENE-D | Pericarp | | 13.0 | | -- |
| 1 | 3',4',5,6,7,8-HEXAMETHOXYFLAVONE | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 9 | CAMPHERE | Pericarp | | | | -- |
| 1 | COPAENE | Pericarp | | 2.0 | | -- |
| 7 | HISTIDINE | Fruit | | 140.0 | -1.1025880317240395 | -- |
| 44 | SCOPOLETIN | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | N-HENTRIACONTANE | Fruit | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 2 | FRIEDELIN | Pericarp | | | | CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses |
| 3 | VALINE | Fruit | | 240.0 | -0.8692582235353649 | -- |
| 11 | PERILLALDEHYDE | Pericarp | | | | Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp. |
| 28 | ALPHA-PINENE | Leaf | | 55.0 | -0.22097367328296394 | -- |