**Dr. Duke's Phytochemical and Ethnobotanical Database**

**Chemicals Found in Brassica oleracea var. italica**

| Activity Count | Chemical | Plant Part | Low PPM | High PPM | StdDev | Reference Citation |
|---|---|---|---|---|---|---|
| 1 | 4-HYDROXY-GLUCOBRASSICIN | Leaf | 3 | 325 | | |
| 3 | ACETONE | Root | -- | 800 | | |
| 3 | ACETONE | Leaf | -- | 500 | | Jim Duke's personal files. |
| 3 | ALANINE | Leaf | 1180 | 12673 | 0.017867252591863454 | USDA's Ag Handbook 8 and sequelae) |
| 16 | ALLYL-ISOTHIOCYANATE | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 10 | ALPHA-AMYRIN | Bud | 5 | 30 | | Jim Duke's personal files. |
| 7 | ALPHA-CAROTENE | Plant | -- | -- | | Jim Duke's personal files. |
| 15 | ALPHA-LINOLENIC-ACID | Leaf | 1290 | 13855 | 1.243183883058032 | USDA's Ag Handbook 8 and sequelae) |
| 1 | ALPHA-LIPOIC-ACID | Plant | 95 | 940 | -1 | |
| 32 | ALPHA-TOCOPHEROL | Leaf | 7 | 439 | 0.35927304562664447 | |
| 5 | ALUMINUM | Leaf | 1 | 27 | -0.7515974845433717 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 14 | ARGININE | Leaf | 1450 | 15573 | -0.25040545078848814 | USDA's Ag Handbook 8 and sequelae) |
| 2 | ARSENIC | Leaf | -- | 0.01 | -0.8114109228193096 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 112 | ASCORBIC-ACID | Leaf | 911 | 10360 | 0.5173558895778465 | |
| 3 | ASPARTIC-ACID | Leaf | 2130 | 22876 | -0.262328714251028 | USDA's Ag Handbook 8 and sequelae) |
| 9 | BETA-AMYRIN | Bud | -- | -- | | Jim Duke's personal files. |
| 53 | BETA-CAROTENE | Leaf | 9 | 138 | -0.5369565297726103 | |
| 2 | BETA-CRYPTOXANTHIN | Plant | -- | -- | | Jim Duke's personal files. |

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|---|---|---|---|---|---|---|
| 47 | BETA-SITOSTEROL | Plant | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 4 | BORON | Leaf | 1 | 85 | 0.6469238451071857 | |
| 4 | BORON | Stem | -- | 21 | -0.7419113414039952 | |
| 3 | CADMIUM | Leaf | 0.01 | 0.18 | -0.7863999904697607 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 102 | CAFFEIC-ACID | Leaf | -- | 8 | -0.7148173591555008 | |
| 28 | CALCIUM | Leaf | 360 | 54247 | 2.4468006382605774 | |
| 77 | CHLOROGENIC-ACID | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 21 | CHLOROPHYLL | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 24 | CHROMIUM | Leaf | 0.005 | 0.18 | -0.6314530785674829 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 18 | CINNAMIC-ACID | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 23 | CITRIC-ACID | Plant | -- | -- | | Jim Duke's personal files. |
| 2 | COBALT | Leaf | 0.02 | 0.6 | -0.29531921745391343 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 12 | COPPER | Leaf | 0.68 | 52 | 0.6699011255650867 | |
| 2 | CYSTINE | Leaf | 200 | 2148 | -0.6472110127615397 | USDA's Ag Handbook 8 and sequelae) |
| 2 | DIMETHYL-DISULFIDE | Plant | -- | -- | | Jim Duke's personal files. |
| 24 | ETHANOL | Plant | -- | -- | | Jim Duke's personal files. |
| 61 | FERULIC-ACID | Leaf | -- | 13 | 0.08918222301645602 | |
| 15 | FIBER | Leaf | 10760 | 122866 | -0.47818554218157117 | USDA's Ag Handbook 8 and sequelae) |
| 15 | FOLACIN | Leaf | 0.64 | 8.4 | -0.15226470429048047 | USDA's Ag Handbook 8 and sequelae) |

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|---|---|---|---|---|---|---|
| 7 | FUMARIC-ACID | Plant | -- | -- | | Jim Duke's personal files. |
| 1 | GLUCOBRASSICIN | Leaf | 30 | 580 | | |
| 1 | GLUCOIBERIN | Leaf | -- | 248 | | |
| 1 | GLUCONASTURTIN | Leaf | -- | 145 | | |
| 1 | GLUCORAPHANIN | Leaf | 255 | 8990 | | |
| 8 | GLUTAMIC-ACID | Leaf | 3750 | 40275 | 0.12712766718145815 | USDA's Ag Handbook 8 and sequelae) |
| 1 | HEXYL-ACETATE | Plant | -- | -- | | Jim Duke's personal files. |
| 7 | HISTIDINE | Leaf | 500 | 5370 | -0.0031655528062669996 | USDA's Ag Handbook 8 and sequelae) |
| 3 | INDOLE-3-ACETONITRILE | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 32 | INDOLE-3-CARBINOL | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 6 | IRON | Leaf | 8 | 109 | -0.6442917506016965 | |
| 3 | ISOLEUCINE | Leaf | 1090 | 11707 | -0.09196747371544084 | USDA's Ag Handbook 8 and sequelae) |
| 75 | KAEMPFEROL | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 2 | LEUCINE | Leaf | 1310 | 14069 | -0.3764770761728601 | USDA's Ag Handbook 8 and sequelae) |
| 27 | LINOLEIC-ACID | Leaf | 380 | 4081 | -0.6928297779549968 | USDA's Ag Handbook 8 and sequelae) |
| 4 | LYSINE | Leaf | 1410 | 15143 | 0.5181729835111131 | USDA's Ag Handbook 8 and sequelae) |
| 65 | MAGNESIUM | Leaf | 214 | 3072 | -0.406886321355332 | USDA's Ag Handbook 8 and sequelae) |
| 15 | MALIC-ACID | Plant | -- | -- | | Jim Duke's personal files. |
| 14 | MANGANESE | Leaf | 2 | 80 | -0.32688920745367256 | |

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|---|---|---|---|---|---|---|
| 1 | MERCURY | Leaf | 0.002 | 0.09 | 1.1722789664445759 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 2 | METHANOL | Plant | -- | -- | | Jim Duke's personal files. |
| 15 | METHIONINE | Leaf | 340 | 3652 | 0.46965125289987986 | USDA's Ag Handbook 8 and sequelae) |
| 2 | MOLYBDENUM | Leaf | 0.1 | 3.76 | 0.6801012829363977 | |
| 2 | MOLYBDENUM | Stem | -- | 1.76 | -0.13934558811150258 | |
| 1 | NEOGLUCOBRASSICIN | Leaf | -- | -- | | Jim Duke's personal files. |
| 39 | NIACIN | Leaf | 6.4 | 83 | -0.17638140110322484 | |
| 3 | NICKEL | Leaf | 0.3 | 7 | -0.28467312579555515 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 2 | NONACOSANE | Leaf | -- | -- | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 18 | OLEIC-ACID | Leaf | 240 | 2578 | -0.3066324749217592 | USDA's Ag Handbook 8 and sequelae) |
| 25 | P-COUMARIC-ACID | Leaf | -- | 13 | -0.3465642412720655 | |
| 13 | P-HYDROXY-BENZOIC-ACID | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 13 | PALMITIC-ACID | Leaf | 470 | 5048 | -0.2927982427753776 | USDA's Ag Handbook 8 and sequelae) |
| 11 | PANTOTHENIC-ACID | Leaf | 5.35 | 63 | 0.8524389937224381 | USDA's Ag Handbook 8 and sequelae) |
| 3 | PHENETHYL-ISOTHIOCYANATE | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 7 | PHENYLALANINE | Leaf | 840 | 9022 | -0.32366072893862124 | USDA's Ag Handbook 8 and sequelae) |
| 4 | PHOSPHORUS | Leaf | 644 | 9090 | 0.7577587277969241 | |
| 5 | PHYLLOQUINONE | Inflorescence | -- | 0.31 | | |

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|---|---|---|---|---|---|---|
| 5 | PHYLLOQUINONE | Leaf | -- | 1.79 | -1.3371909672181328 | |
| 9 | PHYTIC-ACID | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 2 | PHYTOSTEROLS | Plant | -- | -- | | |
| 14 | POTASSIUM | Leaf | 3178 | 37270 | 0.3058332790917791 | |
| 1 | PROGOITRIN | Leaf | -- | -- | | |
| 176 | QUERCETIN | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 44 | QUERCITRIN | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 1 | QUINIC-ACID | Leaf | -- | -- | | Jim Duke's personal files. |
| 15 | RIBOFLAVIN | Leaf | 1.1 | 21 | -0.07942432526480918 | |
| 87 | RUTIN | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 7 | SALICYLATES | Leaf | 6 | 65 | -0.435551873962273 | |
| 34 | SALICYLIC-ACID | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 60 | SELENIUM | Leaf | 0.002 | 0.024 | -0.3807027917986485 | |
| 60 | SELENIUM | Stem | -- | 0.015 | -0.42886426089167784 | |
| 1 | SERINE | Leaf | 1000 | 10740 | -0.003085924608790074 | USDA's Ag Handbook 8 and sequelae) |
| 4 | SILICON | Leaf | 1 | 90 | -0.14550202645318341 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 9 | SINAPIC-ACID | Leaf | -- | 40 | -0.5050096614914733 | |
| 7 | SINIGRIN | Plant | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 1 | SODIUM | Leaf | 252 | 3091 | -0.09830203577402047 | USDA's Ag Handbook 8 and sequelae) |

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|---|---|---|---|---|---|---|
| 10 | SQUALENE | Plant | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 8 | STEARIC-ACID | Leaf | 70 | 752 | -0.13186141525885503 | USDA's Ag Handbook 8 and sequelae) |
| 12 | STIGMASTEROL | Plant | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 7 | SUCCINIC-ACID | Plant | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 5 | SULFORAPHANE | Plant | -- | -- | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 14 | SULFUR | Leaf | 1200 | 11800 | 1.6302603378370644 | ACTA AGRIC SCAND SUPPL 22: 1980 |
| 31 | THIAMIN | Leaf | 0.6 | 8 | -0.06349209547044472 | USDA's Ag Handbook 8 and sequelae) |
| 4 | THREONINE | Leaf | 910 | 9773 | -0.005488458413534491 | USDA's Ag Handbook 8 and sequelae) |
| 2 | TRANS-FERULIC-ACID | Leaf | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 1 | TRIACONTAN-1-OL | Leaf | -- | -- | | Jeffery B. Harborne and H. Baxter, eds. 1983. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. Taylor & Frost, London. 791 pp. |
| 29 | TRYPTOPHAN | Leaf | 290 | 3115 | 0.10979300838520059 | USDA's Ag Handbook 8 and sequelae) |
| 8 | TYROSINE | Leaf | 630 | 6766 | -0.34477094479123366 | USDA's Ag Handbook 8 and sequelae) |
| 3 | VALINE | Leaf | 1280 | 13747 | 0.29552238675671566 | USDA's Ag Handbook 8 and sequelae) |
| 24 | VANILLIC-ACID | Plant | -- | -- | | Stitt, Paul. Why George should eat broccoli. |
| 77 | ZINC | Leaf | 4 | 118 | 0.19739995136190341 | |