**Supplemental Table S1. Phytochemical constituents of *Foeniculum vulgare* Mill.**

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| --- | --- | --- | --- | --- |
| **No.** | **Phytochemical Classification** | **Extraction Solvent** | **Plant Parts** | **References** |
| **Volatiles and essential oils** |  |  |  |
| **Monoterpenes** |  |  |  |  |
| 1 | *α*-pinene | Dichloromethane | Seeds | Diaaz-Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 2 | Camphene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Water | Fruits | Telci et al., 2009 |
| 3 | Sabinene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 4 | β-pinene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 5 | β-myrcene | Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 6 | *α*-phellandrene | Water | Fruits | Telci et al., 2009 |
| Seeds | Diao et al., 2014 |
| Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009; |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 7 | β-phellandrene | Water | Fruits | Telci et al., 2009 |
| 8 | *α*-terpinene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Water | Fruits | Telci et al., 2009 |
| Seeds | Roby et al., 2013 |
| 9 | *p*-cymene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Water | Fruits | Singh et al., 2006 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 10 | Limonene | Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| 11 | 1,8-cineole | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Water | Fruits | Singh et al., 2006 |
| Seeds | Roby et al., 2013 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 12 | *γ*-terpinene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Singh et al., 2006 |
| Seeds | Roby et al., 2013 |
| 13 | *trans*-sabinene hydrate | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| 14 | Fenchone | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 15 | *α*-terpinolene | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Water | Fruits | Telci et al., 2009 |
| 16 | Linalool | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| Seeds | Díaz -Maroto et al., 2005 |
| Water | Fruits | Singh et al., 2006 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 17 | Camphor | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Water | Fruits | Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 18 | Fenchyl acetate | Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| 19 | *trans*-β-ocimene | Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| 20 | *cis*-β-ocimene | Water | Fruits | Telci et al., 2009 |
| 21 | *cis*-β-terpineol | Water | Fruits | Telci et al., 2009 |
| 22 | Terpinen-4-ol (4-terpineol or p-Menth-1-en-4-ol) | Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| 23 | Carvone | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 24 | δ-3-carene | Water | Fruits | Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| 25 | *α*-terpineol | Water | Fruits | Singh et al., 2006 |
| 26 | Thymol | Water | Fruits | Singh et al., 2006 |
| 27 | *o*-cymene | Water | Seeds | Diao et al., 2014 |
| 28 | Myrcenol | Water | Seeds | Roby et al., 2013 |
| 29 | Fenchol | Solvent-free | Fruits | Afifi et al., 2021 |
| 30 | 2,6-dimethyl-2,7-octadiene-1,6-diol | Solvent-free | Fruits |
| 31 | (*Z*)-β-terpineol | Solvent-free | Fruits |
| 32 | (*Z*)-carveol | Solvent-free | Fruits |
| 33 | Sabinyl acetate | Solvent-free | Fruits |
| 34 | Fenchyl acetate | Solvent-free | Fruits |
| 35 | Limonene oxide  | Solvent-free | Fruits |
| 36 | *α*-thujene | Solvent-free | Fruits |
| 37 | Isoterpinolene  | Solvent-free | Fruits |
| 38 | β-terpinene  | Solvent-free | Fruits |
| 39 | Fenchene  | Solvent-free | Fruits |
| **Iridoids** |  |  |  |
| 40 | Eustomoside | Water, ethanol | Bulbs | Crescenzi et al., 2022 |
| 41 | Swertiamarin | Water, ethanol | Stems |
| 42 | Lucidumoside C | Water, ethanol | Bulbs and stems |
| 43 | Gentiopicrin | Water, ethanol | Bulbs |
| 44 | Deacetylasperuloside | Water, ethanol | Bulbs, stems, and leaves |
| **Diterpenes** |  |  |  |
| 45 | Oridonin | Water, ethanol | Bulbs and stems | Crescenzi et al., 2022 |
| 46 | Neophytadiene | Solvent-free | Fruits | Afifi et al., 2021 |
| **Sesquiterpenes** |   |   |   |
| 47 | *α*-copaene | Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| 48 | Cubebene | Water | Fruits | Telci et al., 2009 |
| 49 | δ-cadinene | Water | Fruits |
| 50 | β-caryophyllene | Water | Fruits | Singh et al., 2006 |
| 51 | (E)-β-farnesene | Water | Seeds | Diao et al., 2014 |
| 52 | Solvent-free | Fruits | Afifi et al., 2021 |
| 53 | *α*-farnesene | Water | Seeds | Roby et al., 2013 |
| 54 | Solvent-free | Fruits | Afifi et al., 2021 |
| 55 | Germacrene | Water | Seeds | Diao et al., 2014 |
| 56 | Nerolidol  | Solvent-free | Fruits | Afifi et al., 2021 |
| 57 | β-ionone | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| 58 | Bergamotene | Solvent-free | Fruits | Afifi et al., 2021 |
| 59 | *α*-curcumene  | Solvent-free | Fruits | Afifi et al., 2021 |
| **Phenylpropene derivatives / Phenylpropanoids** |  |  |
| 60 | *cis*-anethole | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Acetone | Fruits | Singh et al., 2006 |
| 61 | *trans*-anethole | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Acetone | Fruits | Singh et al., 2006 |
| Water | Seeds | Diao et al., 2014 |
| Fruits | Telci et al., 2009; Singh et al., 2006 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 62 | Estragole (methyl cavicol) | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 63 | Myristicin | Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| 64 | Elemicin | Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) | Gross et al., 2009 |
| 65 | Dillapiole | Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) |
| 66 | Apiole | Hexane | Adult plants and seedlings tissues (stalk of infloresensecs, flowers, fruits, and roots) |
| 67 | 4-methoxypropiophenone | Solvent-free | Fruits | Afifi et al., 2021 |
| 68 | Eugenol | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 69 | Methylisoeugenol | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| Others |   |   |   |
| 70 | 2-isopropyl-3-methoxypyrazine | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| 71 | Anisketone  | Dichloromethane | Fruits |
| 72 | Sotolone | Dichloromethane | Fruits |
| 73 | 3-methylbutanal | Water | Fruits | Singh et al., 2006 |
| 74 | 4,8-dimethyl-1,7-nonadien-4-ol | Solvent-free | Fruits | Afifi et al., 2021 |
| 75 | 1,14-tetradecanediol | Solvent-free | Fruits |
| 76 | Isophytol | Solvent-free | Fruits |
| 77 | Jasmone | Solvent-free | Fruits |
| 78 | Bornyl formate | Solvent-free | Fruits |
| 79 | (*Z*)-3-hexenyl benzoate | Solvent-free | Fruits |
| 80 | Methyl jasmonate | Solvent-free | Fruits |
| 81 | Benzyl benzoate  | Solvent-free | Fruits |
| **Phenolic compounds** |  |  |  |
| **Phenolic acids and its derivatives** |   |   |   |
| 82 | 3-*O*-caffeoylquinic acid (neochlorogenic acid) | Water, ethanol | Fruits | Faudale et al., 2008 |
| Bulbs, stems, and leaves | Crescenzi et al., 2022 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| Methanol | Seeds | Roby et al., 2013 |
| 83 | 4-*O*-caffeoylquinic acid (cryptochlorogenic acid) | Water, ethanol | Fruits | Faudale et al., 2008 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| 84 | 5-*O*-caffeoylquinic acid (chlorogenic acid) | Water, ethanol | Fruits | Faudale et al., 2008 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| Methanol | Seeds | Roby et al., 2013 |
| 85 | 1,3-dicaffeoylquinic acid | Water, ethanol | Fruits | Faudale et al., 2008 |
| Bulbs, stems, and leaves | Crescenzi et al., 2022 |
| 86 | 1,4-*O*-dicaffeoylquinic acid | Water, ethanol | Fruits | Faudale et al., 2008 |
| 87 | 1,5-dicaffeoylquinic acid | Water, ethanol | Fruits | Faudale et al., 2008 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| Methanol | Seeds | Roby et al., 2013 |
| 88 | Rosmarinic acid | Water, ethanol | Fruits | Faudale et al., 2008 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| Methanol | Seeds | Roby et al., 2013 |
| 89 | Gallic acid | Methanol | Seeds |
| 90 | Caffeic acid | Methanol | Seeds |
| 91 | *p*-coumaric acid | Methanol | Seeds |
| 92 | Ferulic acid-7-O-glucoside | Methanol | Seeds |
| 93 | Ferulic acid | Methanol | Seeds |
| 94 | Cinnamic acid | Methanol | Seeds |
| 95 | 4-hydroxybenzoic acid 4-*O*-glucoside | Water, ethanol | Bulbs, stems, and leaves | Crescenzi et al., 2022 |
| 96 | 3-*O*-*p*-coumaroylquinic acid | Water, ethanol | Bulbs |
| 97 | 3-*O*-feruloylquinic acid | Water, ethanol | Bulbs and stems |
| 98 | Malonyl-1,4-*O*-dicaffeoylquinic acid | Water, ethanol | Bulbs, stems, and leaves |
| 99 | Caffeoylferuloylquinic acid | Water, ethanol | Stems |
| 100 | Fraxin | Water, ethanol | Bulbs and stems |
| 101 | 6-*O*-methylesculetin | Water, ethanol | Stems |
| **Flavonoids** |   |   |   |
| 102 | Eriodictyol-7-*O*-rutinoside (eriocitrin) | Water, ethanol | Fruits | Faudale et al., 2008 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| 103 | Quercetin-3-*O*-rutinoside (rutin) | Water, ethanol | Fruits | Faudale et al., 2008 |
| Bulbs | Crescenzi et al., 2021 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| 104 | Quercetin-3-*O*-glucuronide (miquelianin) | Water, ethanol | Fruits | Faudale et al., 2008 |
| Stems and leaves | Crescenzi et al., 2021 |
| Water | Leaves, stems, and floral structures | Parejo et al., 2004 |
| 105 | Kaempferol-3-*O*-rutinoside | Water | Leaves, stems, and floral structures |
| 106 | Quercetin-3-*O*-galactoside | Water | Leaves, stems, and floral structures |
| 107 | Quercetin-3-*O*-glucoside | Water | Leaves, stems, and floral structures |
| Water, ethanol | Stems and leaves |
| 108 | Kaempferol-3-*O*-glucoside | Water | Leaves, stems, and floral structures |
| 109 | Quercetin-7-*O*-glucoside | Methanol | Seeds | Roby et al., 2013 |
| 110 | Hesperidin | Methanol | Seeds |
| 111 | Quercetin  | Methanol | Seeds |
| 112 | Apigenin | Methanol | Seeds |
| 113 | Kaempferol 3-*O*-glucopyranoside | Water, ethanol | Stems | Crescenzi et al., 2021 |
| 114 | Luteolin-7-*O*-glucuronide | Water, ethanol | Leaves |
| 115 | Isorhamnetin 3-*O*-β-D-glucuronide | Water, ethanol | Stems and leaves |
| **Others** |   |   |   |
| 105 | Anisylacetone | Solvent-free | Fruits | Afifi et al., 2021 |
| 106 | *p*-anisaldehyde | Dichloromethane | Seeds | Díaz -Maroto et al., 2005 |
| Fruits | Zeller and Rychlik, 2006 |
| Water | Fruits | Telci et al., 2009; Singh et al., 2006 |
| Seeds | Diao et al., 2014 |
| Solvent-free | Fruits | Afifi et al., 2021 |
| 107 | Vanillin | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| 108 | Cuminaldehyde | Water | Fruits | Singh et al., 2006 |
| 109 | Styrene | Water | Seeds | Diao et al., 2014 |
| 110 | Myrciaphenone A | Water, ethanol | Stems | Crescenzi et al., 2022 |
| 111 | Gingerol | Water, ethanol | Bulbs |
| 112 | Guaiacol | Dichloromethane | Fruits | Zeller and Rychlik, 2006 |
| 113 | Benzyl acetate | Solvent-free | Fruits | Afifi et al., 2021 |
| **Other compounds** |  |  |  |
| 114 | Pantothenic acid | Water, ethanol | Bulbs and stems | Crescenzi et al., 2022 |
| 115 | 4-carboxy-1-methylbutyl glucopyranoside | Water, ethanol | Leaves |
| 116 | 4-glucopyranosyloxy-3-methoxy benzeneacetic acid | Water, ethanol | Stems |
| 117 | Tuberonic acid glucoside | Water, ethanol | Bulbs |
| 118 | Glehlinoside C | Water, ethanol | Bulbs and stems |
| 119 | Gingerglycolipid A | Water, ethanol | Stems |