**43**

*Egypt. J. Chem.* **Vol. 67**, No. 1 (2024), Supplementary file, 1- 17

**Egyptian Coniferous Plants: *Pinus canariensis*, *Cupressus lusitanica*, and *Cupressus arizonica*: Phytochemical Review, Biological Potentials, and Future Prospects**

**Rania M. Kamal 1\*, Manal M. Sabry 1, Inas Y. Younis 1, Ali M. El-Halawany 1, Mohamed S. Hifnawy 1**

*1 Department of Pharmacognosy, Faculty of Pharmacy, Cairo University, Cairo 11562, Egypt; rania.ahmed@pharma.cu.edu.eg(R.M.K), manal.sabry@pharma.cu.edu.eg(M.M.S.), Inas.younis@pharma.cu.edu.eg(I.Y.Y), ali.elhalawany@pharma.cu.edu.eg(A.M.E), mohamed.hefnawy@pharma.cu.edu.eg(M.S.H.)*

\* Correspondence: rania.ahmed@pharma.cu.edu.eg

**Table S1: Major constituents present in *Cupressus arizonica* oils ),**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Compound | RRIa | Plant Codeb | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Monoterpene hydrocarbons | | | | | | | | | | | | | | | | | | | | |
| Tricyclene | 925 | 0.28 | 0.2 | 0.1 | - | - | 0.1 | t | - | - | 0.3 | - | t | - | 0.1 | 0.5 | - | - | 0.1 | 0.6 |
| *α-*Thujene | 930 | 0.75 | 0.91 | 0.6 | - | 0.6 | 0.7 | 1 | t | - | 0.7 | 0.9 | 0.2 | 0.9 | - | t | 1 | - | 0.1 | t |
| *α*-Pinene | 939 | 26.5 | 29.7 | 20 | 11 | 22.9 | 10.3 | 7.8 | 17.1 | 9.3 | 41 | 20.7 | 60.5 | 68.5 | 79.7 | 72 | 22.5 | 51 | 58.6 | 74.6 |
| *α*-Fenchene | 944 | - | - | 0.3 | - | - | 0.1 | - | - | - | 0.1 | - | 0.9 | 0.1 | - | 0.3 | 0.1 | - | 0.8 | 0.3 |
| Camphene | 954 | 0.61 | 0.59 | 0.1 | - | 0.1 | 2.4 | 0.5 | t | - | 0.4 | 0.2 | t | 0.3 | - | 0.5 | 0.2 | 0.61 | 0.1 | 0.8 |
| Sabinene | 975 | 1.7 | 2.51 | 2.9 | 2 | 3 | 1.6 | 3.5 | 2.8 | 0.41 | 2.7 | 1.9 | 0.9 | 0.7 | 0.1 | 0.4 | 2.4 | - | 0.5 | 0.7 |
| *β*-Pinene | 979 | 0.68 | 0.71 | 0.5 | - | 0.9 | 0.2 | 0.2 | t | 0.32 | 1.1 | 0.4 | 1.6 | 2.1 | 0.4 | 3.6 | 0.5 | 4.9 | 2.7 | 3.7 |
| Myrcene | 990 | 0.85 | 0.75 | 1.4 | 1 | 1.2 | 1.3 | 1.4 | 1.6 | 0.62 | 3.6 | 4 | 2.6 | 11.9 | 0.2 | 6.5 | 5.3 | 17.9 | 3.6 | 5.3 |
| *δ*-4-Carene | 1002 | - | 0.44 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Phellandrene | 1005 | 0.32 | - | 0.1 | - | 0.1 | 0.2 | t | - | - | 0.1 | - | t | - | - | t | - | - | t | - |
| *δ*-3-Carene | 1011 | 1.02 | 1.72 | 1 | - | 0.5 | - | 0.6 | - | 0.43 | 0.9 | 0.4 | 15.3 | 1.4 | - | 5.7 | 0.6 | 2 | 15.6 | 4 |
| *O*-Cymene | 1014 | - | - | - | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *δ*-2-Carene | 1015 | - | - | - | - | - | 1.5 | - | - | - |  | - | - | - | - | - | - | - | - | - |
| *α*-Terpinene | 1017 | 0.83 | 1.07 | 0.8 | - | 0.3 | - | 1 | - | - | 0.9 | 1.4 | 0.1 | 0.1 | - | t | 1.5 | - | 0.1 | 0.2 |
| *p*-Cymene | 1024 | 1.47 | 1.56 | 0.5 | - | 1.1 | 1.6 | 2.1 | 1.5 | - | 1.7 | 0.6 | 0.2 | 0.1 | - | 0.1 | 0.6 | - | 0.2 | 0.2 |
| Limonene | 1029 | 4.12 | 4.09 | 5.8 | 6 | 8.5 | 8.8 | 4.3 | 7.4 | 2.18 | 7.4 | 5.9 | 2.9 | 4 | 3.9 | 2.6 | 6.8 | 9.6 | 3.9 | 1.8 |
| *β*-Phellandrene | 1038 | - | - | 0.1 | - | - | - | 1.7 | 1 | - | - | 3.9 | t | 0.4 | - | 1 | 4 | - | t | 1.5 |
| *E*-*β*-Ocimene | 1051 | - | - | 0.1 | - | - | - | t | - | - | t | - | t | 0.6 | - | 1.1 | t | - | 0.1 | 0.6 |
| γ-Terpinene | 1055 | - | - | - | - | 1.9 | - | 1.4 | - | 0.43 | 1.4 | 1.9 | - | 0.2 | - | 0.1 | 1.9 | 0.29 | - | 0.2 |
| *δ*-Terpinene | 1059 | 2.06 | 2.86 | 1.1 | - | - | 2 | - | 1.5 | - | - | - | 0.3 | - | 1 | - | - | - | 0.3 | - |
| *m*-cymenene | 1082 | - | - | - | - | - | - | - | - | 0.63 | - | - | - | - | - | - | - | 2.6 | - | - |
| *α*-Terpinolene | 1088 | 0.85 | 1.03 | 1.3 | - | 1.4 | 1.4 | 0.7 | t | - | 0.8 | 1.8 | 3.5 | 1.5 | 1 | 1.5 | 2 | - | 3.3 | 1.9 |
| *p*-Mentha-1,4,8-triene | 1088 | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | 0.2 | - | - | - | - | - |
| *p*-Cymenene | 1089 | - | - | - | - | - | - | 0.2 | - | 0.74 | 0.1 | - | - | - | - | t | - | 0.47 | - | 0.1 |
| 1,3,8-*p*-Menthatriene | 1108 | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - | - | - |
| Alloocimene | 1132 | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oxygenated monoterpenes | | | | | | | | | | | | | | | | | | | | |
| *p*-Cymen-8-ol | 1026 | 0.35 | 0.65 | t | - | 0.1 | - | t | t | - | 0.2 | - | - | - | - | - | - | - | - | - |
| *cis*-Sabinene hydrate | 1068 | - | - | 0.1 | - | - | - | 0.4 | t | - | t | - | t | - | - | t | - | - | t | t |
| Linalool | 1096 | 0.4 | 0.72 | t | - | - | 0.1 | 0.1 | t | - | 0.3 | 0.8 | - | 0.2 | - | t | 0.9 | - | - | t |
| 2-Nonanone | 1097 | - | - | - | - | - | 0.2 | - | - | - | t | - | - | - | - | - | - | - | - | - |
| *n*-Nonanal | 1098 | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - | - | - |
| 6-Camphenol | 1107 | - | - | - | - | - | - | - | - | 0.22 | - | - | - | - | - | - | - | 0.13 | - | - |
| *trans*-Thujone | 1112 | - | - | - | - | - | - | - | t | - | t | - | - | - | - | - | - | - | - | - |
| *cis*-*p*-Menth-2-en-1-ol | 1118 | - | - | - | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - |
| *β*-Fenchol | 1121 | 1.48 | 1.38 | - | - | - | 0.4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Campholenal | 1125 | 0.18 | 0.38 | - | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - |
| *trans-Sabinol* | 1137 | - | - | - | - | - | - | - | - | 0.29 | - | - | - | - | - | - | - | - | - | - |
| *trans*-Limonene oxide | 1138 | - | - | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - |
| (*Z*)-Pinocarveol | 1139 | 0.9 | 0.59 | - | - | - | - | - | - | - | 0.2 | - | - | t | - | - | - | - | - | - |
| *trans-p*-Menthe-2-en-1-ol | 1140 | - | 0.38 | t | - | - | - | - | t | - | 0.1 | - | - | t | - | - | - | - | - | - |
| *cis-*Pinene hydrate | 1142 | - | - | - | - | - | - | - | - | 0.64 | - | - | - | - | - | - | - | 0.58 | - | - |
| Camphor | 1146 | 1.83 | 2.68 | 1.1 | 1.4 | 0.2 | - | 2.5 | 2.8 | - | 1.9 | 0.9 | t | t | - | 0.2 | 1 | 0.64 | 0.1 | 0.1 |
| Camphene hydrate | 1149 | 0.23 | 3.82 | 0.5 | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - |
| Sabina ketone | 1158 | - | - | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - |
| trans-β-Terpineol | 1159 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.41 | - | - |
| Pinocarvone | 1164 | - | 0.98 | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - | - | - |
| *p*-Mentha-1,5-dien-8-ol | 1168 | - | - | - |  | - | - | - | - | - | 0.2 | - | - | - | - | - | - | - | - | - |
| Borneol | 1169 | - | 0.53 | - | - | - | 0.4 | - | - | - | 0.1 | - | - | - | - | - | - | - | - | 0.1 |
| Umbellulone | 1171 | 15.05 | 11.86 | 18.4 | 13 | 16.5 | - | 45.1 | 8 | 19.88 | 9 | 5.8 | 1 | 0.2 | - | - | 4 | - | 0.8 | t |
| Terpinen-4-ol | 1177 | 4.08 | 5.72 | 1.4 | 4 | 5.5 | - | 3.4 | 3.5 | 3.1 | 3.6 | 4.3 | 0.4 | 0.8 | - | 0.1 | 4.1 | 1.37 | 0.4 | 0.2 |
| *p*-Cymen-8-ol | 1179 | - | - | - | - | - | - | - | - | 1.64 | - | - | - | - | - | - | - | - | - | - |
| *α*-Terpineol | 1189 | - | - | 0.8 | 1.3 | 0.2 | 0.1 | 0.5 | t | 0.68 | 1.1 | 0.6 | t | 1 | 0.2 | 0.3 | 0.5 | 2.38 | t | 0.4 |
| *cis*-Piperitol | 1194 | - | - | - | - | - | 0.1 | - | - | 0.42 | t | - | - | - | - | - | - | - | - | - |
| Myrtenol | 1194 | - | - | - | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - |
| Myrtenal | 1195 | - | 0.32 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *trans*-Piperitol | 1207 | - | - | - | - | - | - | - | - | 0.32 | t | - | - | - | - | - | - | - | - | - |
| Verbenone | 1208 | - | - | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - |
| (*E*)-Carveol | 1217 | - | 0.49 | 0.1 | - | - | - | - | t | - | 0.1 | - | - | - | - | - | - | - | - | - |
| *cis*-Sabinene hydrate acetate | 1218 | - | - | - | - | - | - | - | - | 0.25 | - | - | - | - | - | - | - | 1.25 | - | - |
| *β*-Citronellol | 1225 | 0.6 | 0.56 | 0.4 | - | - | 0.1 | - | - | 0.31 | 0.8 | 0.2 | - | 0.5 | - | - | 0.3 | - | - | - |
| Thymol methylether | 1235 | 0.36 | 0.42 | 0.1 | - | - | 0.2 | - | t | - | 0.1 | - | 0.1 | - | - | - | 0.1 | - | t | - |
| Z-Ocimenone | 1236 | - | - | - | - | - | - | - | - | 0.38 | - | - | - | - | - | - | - | 1.4 | - | - |
| Carvacrol, methyl ether | 1247 | - | - | 0.1 | - | - | - | - | - | - | t | - | t | - | - | - | - | - | 0.3 | - |
| *trans*-Sabinene hydrate acetate | 1251 | - | - | - | - | - | - | - | - | 0.29 | - | - | - | - | - | - | - | - | - | - |
| Piperitone | 1252 | - | 0.33 | t | - | - | - | - | - | - | 0.1 |  | - | - | - | - | - | - | - | - |
| Linalyl acetate | 1257 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Geraniol | 1258 | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Terpinene-7-ol | 1281 | - | - | - | - | - | - | - | - | 0.26 | - | - | - | - | - | - | - | - | - | - |
| Bornyl acetate | 1285 | 0.54 | 0.89 | - | - | - | - | t | t | - | 0.4 | - | - | - | - | t | - | - | - | - |
| Thymol | 1290 | 0.49 | 0.33 | 0.2 | - | - | 0.1 | - | t | - | - | - | t | - | - | - | - | - | 0.2 | - |
| *δ-*Terpinene-7-ol | 1292 | - | - | - | - | - | - | - | - | 0.65 | - | - | - | - | - | - | - | - | - | - |
| Isobornyl acetate | 1292 | - | - | 0.2 | - | - | 0.3 | 0.2 | - | - | - | - | 0.2 | - | - | 0.2 | - | - | 0.1 | - |
| Terpinen-4-ol acetate | 1300 | - | - | 0.3 | - | - | - | - | - | - | 0.3 | - | t | - | - | - | - | - | t | - |
| 3-Thujyl acetate | 1303 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *trans*-Carvyl acetate | 1339 | - | - | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - |
| *trans*-Piperitol acetate | 1346 | - | - | 0.1 | - | - | - | - | 1.4 | - | - | - | 0.5 | - | - | - | - | - | 0.5 | - |
| *α*-Terpinyl acetate | 1350 | 0.89 | - | 1.1 | - | 0.6 | - | - | - | 0.65 | 0.6 | 1.2 | 2.8 | 0.2 | - | - | 1.2 | 0.43 | 2.6 | - |
| Sesquiterpene hydrocarbons | | | | | | | | | | | | | | | | | | | | |
| *α*-Copaene | 1376 | - | - | 0.1 | - | - | - | - | - | - | - | - | t | - | - | 0.1 | - | - | t | t |
| Ionole | 1377 | 1.26 | 0.83 | - | - | - | 1.5 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *β*-Bourbonene | 1384 | - | - | t | - | - | 0.2 | - | - | - | - | - | t | - | - | - | - | - | t | - |
| *β*-Cubebene | 1388 | 6.71 | 0.32 | 0.1 | - | - | 10.1 | - | - | - | - | - | t | - | - | t | - | - | t | - |
| *β*-Elemene | 1390 | - | - | - | - | - | 0.6 | - | - | - |  | - | - | - | - | - | - | - | - | - |
| *α*-Cedrene | 1411 | 0.66 | 4.12 | - | - | 0.9 | 8.2 | t | - | - | - | - | - | - | 0.9 | - | - | - | - | - |
| *β*-cedrene | 1419 | - | - | 0.1 | - | - | - | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Longifolene | 1421 | - | - | 0.2 | - | - | - | - | - | - | t | - | 0.1 | - | - | 0.3 | - | - | 0.1 | t |
| *E*-Caryophyllene | 1429 | - | - | 0.3 | - | 0.1 | - | t | - | 0.24 | 0.2 | 0.4 | - | 0.4 | - | 0.1 | 0.4 | - | - | 0.1 |
| *β*-Copaene | 1429 | - | - | - | - | - | - | - | - | 0.16 | - | - | - | - | - | - | - | - | - | - |
| Aromadendrene | 1441 | 1.65 | 0.89 | - | - | - | 3.6 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *cis*-Muurola-3,5-diene | 1450 | - | - | 3.3 | - | 3.4 | - | - | 6.5 | 3.59 | 2.7 | - | 0.1 | - | - | - | - | - | 0.2 | - |
| *trans*-Muurola-3,5-diene | 1454 | - | - | - | - | - | - | - | 15.5 | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Humulene | 1454 | - | - | 0.2 | - | - | 0.4 | 0.1 | t | - | 0.1 | - | 0.2 | - | 0.1 | - | - | - | 0.1 | - |
| *cis*-Cadina-1(6),4-diene | 1456 | - | - | - | - | - | - | - | - | - | 6.4 | - | - | - | - | - | - | - | - | - |
| *cis*-Muurola-4(14),5-diene | 1461 | - | - | 9.4 | - | 9 | - | 3.7 | - | 21.27 | - | - | - | - | - | - | - | - | - | - |
| Dehydroaromadendrene | 1462 | - | - | - | - | - | 1.1 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Alloaromadedrene | 1467 | - | - | - | 3.3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *epi*-Bicyclosesquiphellandrene | 1472 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *δ*-Murrolene | 1479 | 0.69 | 0.31 | - | - | - | 2.6 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *δ*-Curcumene | 1480 | 0.55 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *ar*-Curcumene | 1481 | - | - | - | - | - | 0.2 |  | - | - | t | 0.3 | - | t | - | - | 0.2 | - | - | -- |
| Germacrene D | 1485 | - | 0.27 | 0.2 | - | - | 0.5 | - | - | - | - | - | 0.7 | - | 0.1 | t | - | - | 0.6 | - |
| *β*-Alaskene | 1489 | - | - | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - |
| *β*-Selinene | 1490 | - | - | - | - | - | 0.5 | - | - | - | - | - | - | - | - | t | - | - | - | t |
| Epizonarene | 1494 | - | - | - | - | 3.7 | - | 0.7 | - | - | 1.6 | - | - | - | - | - | - | - | - | - |
| *α*-Muurolene | 1498 | - | - | - | - | - | - | - | - | 7.87 | - | - | 5.6 | - | - | - | 0.1 | - | - | - |
| *epi*-Zonarene | 1505 | - | - | 2.8 | - | - | - | - | - | - | - | 10.4 | - | 0.3 | - | - | 9.9 | - | - | - |
| *α*-Farnesene | 1505 | - | - | - | - | - | 0.3 |  | - | - | - | - | - | - | - |  | - | - | - |  |
| *α*-Alaskene | 1507 | - | - | - | - | - | - | - | - | - | 0.1 | 0.3 | - | 0.1 | - | t | 0.3 | - | - | - |
| *γ*-Cadinene | 1511 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 0.1 | - | - | - |
| *δ*-Cadinene | 1513 | - | 1.04 | 0.7 | - | 0.6 | - | t | t | 5.84 | 0.5 | 1.2 | - | 0.1 | - | - | 1.2 | - | - | - |
| *β*-Curcumene | 1515 | - | - | - | - | - | - | - | - | 0.35 | - | - | - | - | - | - | - | - | - | - |
| *trans*-Calamenene | 1516 | - | - | - | - | - | - | 1 | - | - | 0.8 | 0.7 | - | t | - | - | 0.5 | - | - | - |
| *cis*-Calamenene |  | - | - | - | - | 3.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *Β-*Sesquiphellandrene | 1522 | 2.01 | 3.11 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Zonarene | 1526 | - | - | 0.4 | - | - | - | - | - | - | - | 7.6 | - | 0.2 | - | - | 6.9 | - | - | - |
| Calamanene | 1529 | 4.5 | 0.17 | 2.2 | 3.4 | - | 2.3 | - | 5.2 | - | - | - | - | - | - | - | - | - | - | - |
| (*Z*)-Cadina-1.4-diene | 1534 | 0.36 | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Cadinene | 1539 | - | -- | - | - | - | - | - | - | 1.32 | - | - | - | - | - | - | - | - | - | - |
| *α*-Calacorene | 1545 | 0.53 | - | 0.9 | - | - | 0.5 | - | t | - | 0.1 | - | 2.3 | - | - | - | - | - | 1.1 | - |
| Oxygenated sesquiterpenes | | | | | | | | | | | | | | | | | | | | |
| Cubebol | 1510 | - | - | 0.2 | - | - | - | - | - | - | - | - | 0.2 | - | - | - | - | - | 0.1 | - |
| 10-*epi*-Cubebol | 1524 | - | - | 0.5 | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - |
| Italicene ether | 1536 | - | - | 0.8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Copaen-11-ol | 1540 | - | - | 0.3 | - | - | - | - | - | - | - | - | t | - | - | - | - | - | 0.1 | - |
| *trans*-Muurol-5-en-4-*α*-ol | 1549 | - | - | - | - | - | - | - | - | - | 0.2 | - | - | - | - | - | - | - | - | - |
| *cis*-Muurola-5-en-4-*β*-ol | 1550 | - | - | 3.5 | - | - | - | - | 1.8 | - | 0.1 | - | 0.1 | - | - | - | - | - | 0.2 | - |
| Elemol | 1552 | - | - | 1.4 | - | - | - | - | - | 0.4 | - | - | 0.3 | - | - | - | - | - | 0.2 | - |
| Germacrene B | 1553 | - | - | - | - | - | - | - | - | 0.75 | - | - | - | - | - | - | - | - | - | - |
| *cis*-Muurola-5-en-4-*α*-ol | 1559 | - | - | 2 | - | - | - | - | 1.2 | - | - | - | - | - | - | - | - | - | - | - |
| Elemicin | 1560 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *β*-Calacorene | 1562 | - | - | - | - | - | - | - | t | 0.84 | - | - | - | - | - | - | - | - | - | - |
| (*E*)-Nerolidol | 1563 | 0.23 | - | - | - | - | 0.2 | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - |
| Caryophyllene oxide | 1572 | - | - | - | - | - | - | - | - | - | 0.1 | - | - | - | - | - | - | - | - | - |
| Germacrene D-4-ol | 1574 | - | - | t | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Spathulenol | 1578 | - | - | - | - | 0.3 | - | - | t | - | - | - | - | - | - | - | - | - | - | - |
| Caryophyllene oxide | 1581 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *β*-Caryophylleneepoxide | 1583 |  | 0.32 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tyjopsan-2α-ol | 1586 | - | - | - | - | - | - | - | - | 0.27 | - | - | - | - | - | - | - | - | - | - |
| Cedrol | 1600 | 1.36 | 1.01 | 0.2 | 1.2 | - | 2.1 | 0.8 | t | - | 0.1 | 0.5 | t | 0.1 | 0.1 | - | 0.4 | - | t | - |
| *β*-Oplopenone | 1605 | - | - | - | - | - | 0.1 | - | t | - | - | - | - | - | - | - | - | - | - | - |
| Humulene epoxide II | 1606 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1,10-Di-epi-cubenol | 1617 | - | - | - | - | - | - | - | - | 0.72 | - | - | - | - | - | - | - | - | - | - |
| 1-*epi*-Cubenol | 1627 | - | - | 0.1 | 4.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *α*-Acorenol | 1630 | - | - | 0.2 | 1 | - | - | 2.5 | 3.3 | 0.24 | - | 2.1 | - | 0.3 | - | t | 1.6 | - | - | t |
| *epi*-Cedrol | 1631 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *β*-Acorenol | 1637 | - | - | 0.1 | - | - | - | 0.6 | t | - | - | - | - | - | - | - | - | - | - | - |
| *epi*-*α*-Muurolol | 1639 | - | - | - | - | - | - | - | t | 4.76 | - | - | - | - | - | - | - | - | - | - |
| *epi-α*-Cadinol | 1640 | - | - | 0.1 | - | - | - | - | t | - | 0.2 | - | - | - | - | - | - | - | - | - |
| t -Cadinol | 1640 | - | - | - | - | - | 0.7 | - | - | - | - | - | - | - | - |  | - | - | - | - |
| Alloaromadendrene epoxide | 1641 | - | - | - | - | - | 0.1 | - | - |  | - | - | - | - | - | - | - | - | - | - |
| *α*-Cadinol | 1654 | 0.77 | 0.57 | 0.1 | 1 | - | 0.1 | 0.2 | 2 | 0.96 | 0.3 | 2.1 | - | 0.1 | - | - | 1.8 | - | - | - |
| Dehydroeudesmol | 1661 |  |  |  |  |  |  |  |  | 0.53 |  |  |  |  |  |  |  | - |  |  |
| *E*-Bisabolol-11-ol | 1668 |  |  |  |  |  |  |  |  | 0.28 |  |  |  |  |  |  |  | - |  |  |
| Cadalene | 1674 | 0.4 | - | t | - | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |
| *epi-α-*Bisabolol | 1680 |  |  |  |  |  |  |  |  | 0.38 |  |  |  |  |  |  |  | - |  |  |
| *α-*Bisabolol | 1687 |  |  |  |  |  |  |  |  | 0.38 |  |  |  |  |  |  |  | - |  |  |
| *cis*-14-nor-Muurol-5-en-4-one | 1689 | - | - | 0.2 | - | - | - | - | 7.2 |  | 0.3 | - | t | - | - | - | - | - | 0.1 | - |
| *β*-Acorenone | 1692 | - | - | - | - | - | 0.3 | - | - |  | - | - | - | - | 0.1 | - | - | - | - | - |
| Eudesm-7(11)-en-4-ol | 1694 | - | - | - | 4 | - | - | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 14-Norcadin-5-en-4-one | 1697 | 2.78 | 0.79 | - | - | - | 1.4 | - | - |  | - | - | - | - | - | - | - | - | - | - |
| 11-*nor*-Cadin-5-en-4-one, isomer B | 1706 | - | - | - | - | - | - | - | - | 1.68 | - | - | - | - | - | - | - | - | - | - |
| (*Z*)-Nuciferol | 1722 | - | - | - | - | - | - | - | - | - | 0.1 | 0.3 | - | 0.1 | - | - | 0.2 | - | - | - |
| Curcumenol | 1730 | - | - | - | - | - | - | - | - | 0.51 | - | - | - | - | - | - | - | - | - | - |
| Hydrocinnamaldehyde | 1738 | - | - | - | - | - | 0.4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2,7(14)-Bisaboladien-12-ol | 1759 | - | - | - | - | - | - | - | - | 0.52 | - | - | - | - | - | - | - | - | - | - |
| Guaiazulene | 1856 | - | - | - | - | - | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Diterpene hydrocarbons | | | | | | | | | | | | | | | | | | | | |
| Isopimara-9-(11),15-diene | 1906 | - | - | 0.9 | - | - | - | - | - | - | - | - | t | - | - | - | - | - | t | - |
| Sandaracopimara-8(14),15-diene | 1960 | - | - | 1 | - | - | - | - | - | - | - | - | 0.2 | - | - | - | - | - | 0.6 | - |
| Abietatriene | 2054 | - | - | 0.1 | - | - | 0.2 | t | t | - | - | - | 0.5 | - | - | - | - | - | 0.3 | - |
| Abietadiene | 2080 | - | - | 1 | - | - | - | 0.2 | 3 | - | - | - | t | - | - | - | - | - | 0.1 | - |
| Eicosane | 2158 | - | - | - | 27.4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oxygenated diterpenes | | | | | | | | | | | | | | | | | | | | |
| Manool oxide | 1983 | - | - | - | - | - | - | - | t | - | - | - | - | - | - | - | - | - | - | - |
| *epi*-Manoyloxide | 1987 | 0.36 | 0.07 | - | - | - | - | t | - | - | - | - | - | - | - | - | - | - | - | - |
| Kaur-15-ene | 1997 | - | - | - | - | - | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Manoyl oxide | 2010 | - | - | - | - | - | 1.8 | 0.5 | - | - | - | - | - | - | 0.2 | - | - | - | - | - |
| Nezukol | 2080 | - | - | 1.7 | - | - | 0.3 | - | - | - | 0.3 | 0.3 | 0.5 | - | - | - | 0.2 | - | 0.4 | - |
| Phyllocladanol | 2210 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sempervirol | 2283 | - | - | 0.3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4-*epi*-Abietal | 2288 | - | - | 0.1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| *trans*-Totarol | 2314 | - | - | 0.1 | - | - | 0.2 | - | - | - | - | - | 0.2 | - | - | - | - | - | 0.1 | - |
| *trans*-Ferruginol | 2325 | - | - | t | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Labd-(13E)-8.15-diol | 2428 | 0.7 | 1.55 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Miscellaneous | | | | | | | | | | | | | | | | | | | | |
| Tetratriacontane | 2390 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Nonacosane | 2606 | - | - | - | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Dotriacontane | 3046 | - | - | - | 1.4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 17-Pentatriacontene | 3644 | - | - | - | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total identified components | | | | | | | | | | | | | | | | | | | | |
| Total monoterpene hydrocarbons (%) | | 41.17 | 48.2 | 36.7 | 23 | 42.5 | 32.4 | 26.4 | 32.9 | 15.15 | 63.2 | 44 | 89 | 92.8 | 86.6 | 95.9 | 49.4 | 89.56 | 90 | 96.5 |
| Total oxygenated monoterpenes (%) | | 27.38 | 33.03 | 25 | 19.7 | 23.1 | 2.1 | 52.2 | 15.7 | 29.98 | 19.5 | 13.8 | 5 | 2.9 | 0.2 | 0.8 | 12.1 | 8.59 | 5 | 0.8 |
| Total sesquiterpene hydrocarbons (%) | | 18.92 | 11.06 | 20.9 | 7.7 | 20.8 | 32.6 | 5.7 | 27.2 | 40.64 | 12.5 | 20.9 | 9 | 1.1 | 1.1 | 0.5 | 19.6 | 0 | 2.1 | 0.1 |
| Total oxygenated sesquiterpenes | | 5.54 | 2.69 | 9.9 | 12.3 | 0.3 | 5.7 | 4.1 | 15.5 | 13.22 | 1.4 | 5 | 0.6 | 0.7 | 0.2 | 0 | 4 | 0 | 0.7 | 0 |
| Diterpene hydrocarbons | | 0 | 0 | 3 | 27.4 | 0 | 0.2 | 0.2 | 3 | 0 | 0 | 0 | 0.7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Oxygenated Diterpenes | | 1.06 | 1.62 | 2.3 | 0 | 0 | 2.5 | 0.5 | 0 | 0 | 0.3 | 0.3 | 0.7 | 0 | 0.2 | 0 | 0.2 | 0 | 0.5 | 0 |
| Miscellaneous | | 0 | 0 | 0 | 8.4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total identified | | 94.07 | 96.6 | 97.8 | 98.5 | 86.7 | 75.5 | 89.1 | 94.3 | 98.99 | 96.9 | 84 | 100 | 97.5 | 88.3 | 97.2 | 85.3 | 98.15 | 99.3 | 97.4 |

t Detected in traces (<0.1), – not detected

a Relative retention indices calculated from the retention times of the compounds in relation to those of a series of n-alkanes (C8–C25)

analyzed under the same chromatographic conditions

b Plant code according to table 1

**Table S1. Cont. Major constituents present in *Cupressus arizonica* oils**

|  |  |
| --- | --- |
| Compound | RRIa |
| Plant Codeb | | | | | |
| 20 | 21 | 22 | 23 | 24 | 25 |
| Monoterpene hydrocarbons | | | | | | | |
| Tricyclene | 925 | - | - | - | 0.1 | - | - |
| *α-*Thujene | 930 | 1.1 | 1.6 | 0.8 | 0.1 | t | 0.84 |
| *α*-Pinene | 939 | 7.1 | 8.1 | 40.7 | 76.6 | 17.1 | 41.42 |
| *α*-Fenchene | 944 | - | - | 0.4 | - | - | - |
| Camphene | 954 | - | - | 0.4 | 0.1 | t | - |
| Sabinene | 975 | 6.6 | 7 | 0.7 | - | 2.8 | 5.6 |
| *β*-Pinene | 979 | 0.5 | 0.4 | 1.6 | 1.7 | t | 2.11 |
| Myrcene | 990 | 2 | 3.1 | 3.1 | - | 1.6 | 5.76 |
| *α*-Phellandrene | 1005 | 0.1 | 0.6 |  | - | - | - |
| *δ*-3-Carene | 1011 | 5 | 2.3 | 2.4 | - | - | - |
| *δ*-2-Carene | 1015 |  |  |  | - |  | 0.51 |
| *α*-Terpinene | 1017 | 0.2 | 0.2 | 0.5 | - | t | 0.65 |
| *p*-Cymene | 1024 | 5.9 | 3.2 | 1 | 0.1 | 1.5 | - |
| Limonene | 1029 | 8 | 12.9 | 3.2 | 2.6 | 7.4 | 9.87 |
| *β*-Phellandrene | 1038 | - | - | 1.3 | - | 1 | 2.28 |
| 2-heptyl acetate | 1041 | - | 1.1 |  | - | - | - |
| *E-β*-Ocimene | 1051 | - | - | 0.8 | - | - | 0.16 |
| γ-Terpinene | 1055 | 0.5 | 3 | 0.9 | - | - | - |
| δ-Terpinene | 1059 |  |  |  | - | 1.5 | 1.02 |
| Meta-cymenene | 1082 | - | - | - | - | - | - |
| *α*-Terpinolene | 1088 | 0.4 | 2 | 1.2 | 1.6 | - | 0.93 |
| *p*-Menth-1,4,8-triene | 1088 | - | - | - | - | t | - |
| *p*-Cymenene | 1089 | - | - | - | - | - | - |
| Alloocimene | 1132 | - | - | - | - | - | - |
| 1,3,8-*p*-Menthatriene | 1108 | - | - | - | - | t | - |
| Oxygenated monoterpenes | | | | | | | |
| 1,8-cineole | 1033 | 0.5 | 0.5 | - | - | - | - |
| *p*-Cymene-8-ol | 1026 |  |  |  | - | t |  |
| *cis*-Sabinene hydrate | 1068 | - | - | - | - | t | - |
| Linalool | 1096 | 0.3 | 1.6 | 0.3 | 0.1 | t | - |
| 2-Nonanone | 1097 | - | 1.1 | - | 0.3 | - | - |
| *n*-Nonanal | 1098 | - | - | - | - | t | - |
| 6-Camphenol | 1107 | - | - | - | - | - | - |
| *trans*-Thujone | 1112 | - | - | - | - | t | - |
| *cis*-*p*-Menth-2-en-1-ol | 1118 | 1 | 4 | - | - | - | - |
| *β-*Fenchol | 1121 | - | - | - | - | - | - |
| *α*-Campholenal | 1125 | 0.3 | - | - | - | - | - |
| *trans*-Sabinol | 1137 | - | - | - | - | - | - |
| *(Z)*-Pinocarveol | 1139 | - | - | 0.7 | - | - | - |
| *trans-p*-Menthe-2-en-1-ol | 1140 | 1 | 0.8 | 0.3 | - | t | - |
| *cis*-Pinene hydrate | 1142 | - | - | - | - | - | - |
| Camphor | 1146 | 0.7 | 0.7 | 0.3 | - | 2.8 | 0.29 |
| trans-*β*-Terpineol | 1159 | - | - | - | - | - | - |
| Pinocarvone | 1164 | 0.3 | 0.4 | - | - | t | - |
| Umbellulone | 1171 | 30.6 | 20.9 | 2.9 | - | 8 | 5.3 |
| Terpinen-4-ol | 1177 | 4.2 | 5.6 | 3.8 | - | 3.5 | 2.31 |
| *p*-Cymen-8-ol | 1179 | 1.4 | 0.5 | - | - | - | - |
| *p*-mentha-1(7),8-dien-2-ol | 1187 | 1.6 | - | - | - | - | - |
| *α*-Terpineol | 1189 | 2.2 | 1.4 | 1.5 | - | t | 0.61 |
| *cis*-Piperitol | 1194 | 0.3 | - | 0.6 | - | - | - |
| Myrtenal | 1195 | - | - | 0.3 | - | - | - |
| *trans*-Piperitol | 1207 | 0.6 | 0.9 | - | - | - | - |
| (*E*)-Carveol | 1217 | 0.3 | t | - | - | t | - |
| *cis*-Sabinene hydrate acetate | 1218 | - | - | - | - | - | - |
| *β*-Citronellol | 1225 | - | - | - | - | - | 0.82 |
| Methyl thymol | 1232 | 0.3 | 0.3 | - | - | - | - |
| Thymol methylether | 1235 | - | - | 0.7 | 0.1 | t | 0.51 |
| *Z*-Ocimenone | 1236 | - | - | - | - | - | - |
| Carvone | 1239 | 0.2 | t | - | - | - | - |
| Carvacrol, methyl ether | 1247 | - | - | - | - | - | 0.21 |
| *trans*-Sabinene hydrate acetate | 1251 | - | - | - | - | - | - |
| Piperitone | 1252 | 0.6 | 0.2 | - | - | t | - |
| Dec-9-en-1-ol | 1266 | - | - | - | - | - | 0.15 |
| *α*-Terpinene-7-ol | 1281 | - | - | - | - | - | - |
| Bornyl acetate | 1285 | 2.4 | 3.4 | - | - | t | - |
| Thymol | 1290 | - | - | - | - | t | - |
| *δ*-Terpinene-7-ol | 1292 | - | - | - | 0.1 | - | - |
| 3-Thujyl acetate | 1303 | - | - | - | - | - | 0.42 |
| *α*-Terpinyl acetate | 1350 | 3.8 | 2.9 | 0.7 | - | 1.4 | - |
| Sesquiterpene hydrocarbons | | | | | | | |
| *β-Elemene* | 1390 | - | - | - | 0.1 | - | - |
| *α*-gurjunene | 1409 | - | 0.6 | - | - | - | - |
| *α*-cedrene | 1411 | - | - | - | 1.3 | - | - |
| Longifolene | 1421 | - | - | 0.3 | - | - | 0.27 |
| *E*-Caryophyllene | 1429 | - | - | - | - | - | 0.5 |
| *β*-Copaene | 1429 | - | - | - | - | - | - |
| Aromadendrene | 1441 | - | - | - | 0.2 | - | - |
| *cis*-Muurola-3,5-diene | 1450 | - | - | - | - | 6.5 | 2.93 |
| *trans*-Muurola-3,5-diene | 1454 | - | - | - | - | 15.5 | - |
| *α*-Humulene | 1454 | - | - | - | - | t | - |
| *cis*-Muurola-4(14),5-diene | 1461 | 0.7 | 0.9 | - | - | - | - |
| *Epi-*Bicyclosesquiphellandrene | 1472 | - | - | - | - | - | 5.29 |
| *δ-*Murrolene | 1479 | - | - | - | 0.1 | - | - |
| *ar-*Curcumene | 1481 | - | - | - | 0.2 | - | - |
| *α*-Muurolene | 1498 | - | - | 0.6 | - | - | - |
| *Epi-Zonarene* | 1505 |  | - | 0.1 | - | - | 2.12 |
| *γ-Cadinene* | 1511 | -- | - | 0.5 | - | - | - |
| *δ*-Cadinene | 1513 | - | - | 1.5 | - | t | 0.58 |
| *β*-Curcumene | 1515 | - | - | - | - | - | - |
| *trans*-Calamenene | 1516 | - | - | 0.4 | - | - | 0.98 |
| Zonarene | 1526 | - | - | 0.9 | - | - | - |
| Calamanene | 1529 | - | - | - | 3.4 | 5.2 | - |
| *α*-Cadinene | 1539 | - | - | - | - | - | - |
| *α*-Calacorene | 1545 | - | - | - | - | t | - |
| *β*-Calacorene | 1562 | - | - | - | - | t | - |
| Oxygenated sesquiterpenes | | | | | | | |
| *trans*-Muurol-5-en-4-*α*-ol | 1549 | - | - | - | - | - | - |
| *cis*-Muurola-5-en-4-*β*-ol | 1550 | - | - | - | - | 1.8 | - |
| Elemol | 1552 | - | - | - | - | - | - |
| Germacrene B | 1553 | - | - | - | - | - | - |
| *cis*-Muurol-5-en-4-*α*-ol | 1559 | - | - | - | - | 1.2 | - |
| *E-*Neolidol | 1568 | - | - | 1.2 | - | - | 0.57 |
| Spathulenol | 1578 | - | - | - | - | t | - |
| Tyjopsan-2α-ol | 1586 | - | - | - | - | - | - |
| Cedrol | 1600 | - | - | 0.2 | 1.5 | t | - |
| *β*-Oplopenone | 1604 | - | - | - | - | t | - |
| 1,10-Di-epi-cubenol | 1617 | - | - | - | - | - | - |
| 1-epi-Cubenol | 1627 | - | - | 0.3 | - | - | - |
| *α*-Acorenol | 1630 | - | - | 0.5 | - | 3.3 | - |
| *epi*-Cedrol | 1631 | - | - | - | - | - | 0.48 |
| *β*-Acorenol | 1637 | - | - | - | - | t | - |
| *epi*-*α*-Muurolol | 1639 | - | - | - | - | t | - |
| *epi-α-*Cadinol | 1640 | - | - | - | - | t | - |
| *α*-Cadinol | 1654 | - | - | 1.5 | 0.1 | 2 | - |
| Dehydroeudesmol | 1661 | - | - | - | - | - | - |
| *E*-Bisabolol-11-ol | 1668 | - | - | - | - | - | - |
| epi-α-Bisabolol | 1680 | - | - | - | - | - | - |
| *α*-Bisabolol | 1687 | - | - | - | - | - | - |
| *cis*-14-nor-Muurol-5-en-4-one | 1689 | - | - | - | - | 7.2 | - |
| 11-*nor*-Cadin-5-en-4-one, isomer B | 1706 | - | - | - | - | - | 0.54 |
| Curcumenol | 1730 | - | - | - | - | - | - |
| 2,7(14)-Bisaboladien-12-ol | 1759 | - | - | - | - | - | - |
| Diterpene hydrocarbons | | | | | | | |
| Abietatriene | 2054 | - | - | - | - | t | - |
| Abietadiene | 2080 | - | - | 0.1 | - | 3 | - |
| Oxygenated diterpenes | | | | | | | |
| Manool oxide | 1983 | - | - | - | - | t | - |
| *trans*-totarol | 2314 | - | - | - | 0.1 | - | - |
| Total monoterpene hydrocarbons (%) | | 37.4 | 45.5 | 59 | 82.9 | 32.9 | 71.15 |
| Total oxygenated monoterpenes (%) | | 52.6 | 45.2 | 12.1 | 0.6 | 15.7 | 10.62 |
| Total sesquiterpene hydrocarbons (%) | | 0.7 | 1.5 | 4.3 | 5.3 | 27.2 | 12.67 |
| Total oxygenated sesquiterpenes | | 0 | 0 | 3.7 | 1.6 | 15.5 | 1.59 |
| Diterpene hydrocarbons | | 0 | 0 | 0.1 | 0 | 3 | 0 |
| Oxygenated Diterpenes | | 0 | 0 | 0 | 0.1 | 0 | 0 |
| Total identified | | 90.7 | 92.2 | 79.2 | 90.5 | 94.3 | 96.03 |

t Detected in traces (<0.1), – not detected

a Relative retention indices calculated from the retention times of the compounds

in relation to those of a series of n-alkanes (C8–C25) analyzed under the same chromatographic conditions

b Plant code according to table 1

**Table S2: Major constituents present in *Cupressus lusitanica* oils**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Compound | RRIa | Plant Codeb | | | | | | | |
| 26 | 27c | 27d | 28 | 29 | 30 | 31 | 32 |
| Monoterpene hydrocarbons | | | | | | | | | |
| 2-Methylpropyl-2-methylpropanoate | 918 | - | - | - | 0.1 | - | - | - | - |
| Tricyclene | 925 | 0.3 | - | - | t | t | - | 0.3 | - |
| *α-*Thujene | 930 | - | 0.6 | 0.5 | - | - | 3.5 | - | 0.4 |
| *α*-Pinene | 939 | 0.6 | 7.4 | 5.3 | 9.9 | 13.8 | 13.2 | 15.4 | 64.5 |
| *α*-Fenchene | 944 | - | - | 0.1 | 0.5 | - | - | - | 0.2 |
| Thuja-2,4(10)-diene | 954 | - | - | - | t | - | - | - | - |
| Camphene | 954 | - | - | - | - | 0.2 | - | - | 0.3 |
| Banzaldehyde | 962 | - | - | - | t | - | - | - | - |
| Sabinene | 975 | 0.3 | 1 | 4.9 | 8.1 | 3.4 | 20.8 | - | 2.5 |
| *β*-Pinene | 979 | - | 0.2 | 0.2 | - | - | 4.2 | 1.2 | 3.1 |
| 3-Octanol | 985 | - | - | - | - | - | - | 4.7 | - |
| Myrcene | 990 | 0.4 | 1.5 | 1.5 | 2.2 | 2.3 | - | - | 6 |
| *α*-Phellandrene | 1005 | 0.1 | - | - | 0.9 | 0.8 | - | - | - |
| *δ*-3-Carene | 1011 | 0.5 | 0.1 | 2.3 | 6.9 | 0.5 | - | 0.9 | 6.5 |
| *O*-Cymene | 1014 | - | - | - | 5.8 | 4 | 4 | - | - |
| *δ*-2-Carene | 1015 | - | - | - | 0.5 | 1.7 | - | - | - |
| *α*-Terpinene | 1017 | 0.2 | 0.6 | 0.2 | 2.6 | - | 5.1 | - | 1 |
| *p*-Cymene | 1024 | 0.5 | 0.5 | 4 | - | - | - | 1.4 | 0.1 |
| *Z*-*β*-Ocimene | 1028 | - | - | - | 0.2 | - | - | 0.3 | 0.3 |
| Limonene | 1029 | 2.3 | 3.5 | 4.2 | 7.9 | 6.6 | 4.9 | 5.4 | 3.5 |
| 2-Heptyl acetate | 1035 | - | 0.4 | 0.2 | - | - |  | - | 0.3 |
| *β*-Phellandrene | 1038 | - | - | - | 0.4 | - | - | - | - |
| Terpinolene | 1043 | - | - | - | - | 2 | 3 | - | - |
| *E*-*β*-Ocimene | 1051 | - | - | - | - | 0.1 | - | - | - |
| γ-Terpinene | 1055 | 0.4 | 1 | 0.1 | 0.2 | 1.7 | 7.5 | 0.1 | - |
| m-cymenene | 1082 | - | - | - | - | - | - | - | - |
| *α*-Terpinolene | 1088 | - | 0.9 | 0.2 | - | - | - | 0.2 | - |
| *p*-Cymenene | 1089 | - | - | - | 1.3 | - | - | - | - |
| E,E-2,6-Dimethyl-1,3,5,7-octatetraene | 1095 | - | - | - | - | 0.3 | - | - | - |
| 1,3,8-*p*-Menthatriene | 1108 | - | - | - | 0.16 | - | - | - | - |
| Oxygenated monoterpenes | | | | | | | | | |
| Octen-3-ol | 971 | - | - | - | - | t | - | 5.5 | - |
| 1,8-cineole | 1022 | 0.8 | 0.4 | 0.2 | - | - | - | - | - |
| *p*-Cymen-8-ol | 1179 | 1 | 0.2 | 0.6 | - | - | 0.3 | 0.3 | 0.5 |
| *cis*-linalool oxide | 1067 | 0.5 | 0.1 | 0.1 | - | - | - | - | - |
| *cis*-Sabinene hydrate | 1068 | - | - | - | 0.4 | t | - | - | - |
| *trans*-Linalool oxide (furanoid) | 1080 | - | 0.1 | 0.1 | - | - | - | - | 0.3 |
| Linalool | 1096 | 6 | 1.3 | 2 | 3.9 | - | 0.8 | 7.2 | 0.3 |
| 2-Nonanone | 1097 | - | - | - | - | 0.2 | - | - | - |
| Umbellulol | 1107 | - | - | - | - | - | - | - | 0.3 |
| *cis*-*p*-Menth-2-en-1-ol | 1118 | - | - | - | - | 0.1 | 0.7 | - | - |
| *α*-Thujone | 1120 | - | - | - | 0.2 | - | 0.2 | - | - |
| *trans-p*-Menthe-2-en-1-ol | 1140 | 0.3 | - | - | 0.6 | - | 0.9 | - | - |
| *cis*-Pinene hydrate | 1142 | - | - | - | - | - | - | - | - |
| Camphor | 1146 | - | - | - | 0.6 | - | 2.4 | - | - |
| Camphene hydrate | 1149 | - | - | - | - | 0.2 | - | - | - |
| Sabina ketone | 1158 | - | - | - | 0.2 | - | - | - | - |
| Borneol | 1169 | - | - | - | - | - | - | 0.2 | - |
| Cryptone | 1169 | - | 0.2 | 0.3 | - | - | - | - | - |
| Umbellulone | 1171 | 6 | 18.3 | 17.3 | 18 | 12.6 | - | 0.4 | 0.3 |
| *cis*-Pinocamphone | 1173 | - | - | - | - | - | - | - | - |
| Hexyl butanoate | 1176 | - | 0.5 | - | - | - | - | 0.4 | - |
| Terpinen-4-ol | 1177 | 6.3 | 2.6 | 2 | 6.1 | 1.3 | 16.8 | 1.1 | 1.9 |
| [*α*,*α*],4-Trimethyl-benzenemethanol | 1184 | - | - | - | 1.2 | - | - | - | - |
| Heptyl propanoate | 1188 | - | 3.3 | - | - | - | - | - | - |
| *α*-Terpineol | 1189 | - | 0.5 | 0.7 | 1.9 | 0.4 | 1.3 | 0.7 | 1.7 |
| *cis*-Piperitol | 1194 | - | - | - | - | - | 0.3 | - | - |
| *γ*-Terpinen-7-al | 1207 | - | - | - | 0.1 | - | - | - | - |
| *trans*-Piperitol | 1207 | - | - | - | - | - | 0.4 | - | - |
| Eucarvone | 1220 | - | - | - | 0.3 | - | - | - | - |
| *β*-Citronellol | 1225 | 0.2 | - | - | - | - | - | - | - |
| 2-Heptyl butyrate | 1230 | - | 0.2 | 0.3 | - | - | - | - | 0.1 |
| Cumin aldehyde | 1238 | - | - | - | 0.3 | - | - | - | - |
| Piperitone | 1252 | - | - | - | 1.1 | - | - | - | - |
| Linalyl acetate | 1259 | 1.2 | - | 0.2 | - | - | - | 0.6 | - |
| Bornyl acetate | 1285 | - | 0.1 | 0.2 | - | 0.2 | 0.5 | - | 0.1 |
| *cis*-Acetoxylinalool oxide | 1286 | - | 0.9 | 0.1 | - | - | - | - | - |
| Thymol | 1290 | 0.4 | 1.6 | 0.6 | 0.7 | 0.3 | - | 1.7 | 0.1 |
| Isobornyl acetate | 1292 | - | 0.6 | - | - | - | - | - | - |
| Terpinolene | 1293 | - | - | - | 0.6 | - | - | - | - |
| Terpin-4-yl acetate | 1332 | - | 0.4 | 0.7 | - | - | - | - | - |
| *α*-cubebene | 1346 | 0.3 | - | - | - | - | - | 0.2 | - |
| *α*-Terpinyl acetate | 1350 | - | 1.3 | 2.5 | - | - | 0.6 | 0.4 | 0.1 |
| *α*-Copaene | 1376 | 0.1 | 0.2 | 0.4 | - | 0.4 | - | 1.3 | - |
| *β*-Bourbonene | 1384 | - | - | - | - | - | - | 2 | - |
| *β*-Cubebene | 1388 | - | - | - | - | - | - | - | - |
| *β*-Elemene | 1390 | - | 0.1 | - | - | - | - | 2.6 | - |
| 3-Isopropylbenzaldehyde | 1397 | - | - | - | 0.1 | - | - | - | - |
| Premnaspirodiene | 1407 | - | - | - | t | - | - | - | - |
| 2,5-Dimethoxy-p-cymene | 1422 | - | - | - | - | - | - | 0.2 | - |
| Sesquiterpene hydrocarbons | | | | | | | | | |
| *α*-Copaene | 1376 | 0.1 | 0.2 | 0.4 | - | 0.4 | - | 1.3 | - |
| *β*-Bourbonene | 1384 | - | - | - | - | - | - | 2 | - |
| *β*-Elemene | 1390 | - | 0.1 | - | - | - | - | 2.6 | - |
| Premnaspirodiene | 1407 | - | - | - | t | - | - | - | - |
| *α*-Cedrene | 1411 | 0.1 | 1.7 | 1.3 | - | 0.3 | - | - | - |
| *β*-Caryophyllene | 1412 | - | 0.7 | 0.4 | - | - | - | 9.6 | 0.6 |
| *β*-cedrene | 1419 | 0.4 | - | 0.2 | - | - | - | - | - |
| *E*-Caryophyllene | 1429 | 1.5 | - | - | 0.1 | 1.3 | - | - | - |
| *β*-Copaene | 1429 | - | 0.2 | 0.1 | - | - | - | 0.4 | - |
| *α*-Humulene | 1454 | 0.6 | 0.6 | 0.3 | - | 0.4 | - | 1.9 | 0.7 |
| *α*-Acoradiene | 1461 | - | 0.5 | - | - | - | - | - | - |
| *α*-Macrocarpene | 1467 | - | - | - | 0.19 | - | - | - | - |
| zingiberene | 1472 | 0.1 | - | - | - | - | - | - | - |
| *α*-curcumene | 1478 | 4.1 | - | 2.1 | 0.2 | - | - | 0.2 | 0.1 |
| *α*-amorphene | 1482 | 2 | - | - | - | - | - | - | - |
| *γ-*Curcumene | 1482 | - | 3 | 1.5 | - | - | - | - | - |
| *γ-*Amorphene | 1483 | - | 0.5 | 0.5 | - | - | - | - | - |
| Germacrene D | 1485 | 18.5 | 8.5 | 2.5 | - | - | - | 2.4 | - |
| *α*-Selinene | 1486 | - | - | - | - | - | - | 4 | - |
| *trans*-Dauca-4(11),7-diene | 1487 | - | - | - | - | 0.2 | - | - | - |
| *β*-Selinene | 1490 | - | - | - | - | - | - | 4.9 | - |
| Amorpha-4,7(11)-diene | 1434 | - | - | - | - | 2.9 | - | - | - |
| *cis*-Muurola-3,5-diene | 1450 | - | 4.2 | 0.4 | 0.5 | 1.6 | - | - | - |
| *cis*-Muurola-4(14),5-diene | 1461 | - | -- | - | 3.4 | - | - | - | - |
| Epizonarene | 1494 | - | - | - | 0.7 | - | - | - | - |
| *β*-Macrocarpene | 1497 | - | - | - | 0.1 | - | - | - | - |
| *α*-Muurolene | 1498 | 1.1 | 0.9 | 0.8 | - | - | - | 0.6 | - |
| Bicyclogermacrene | 1500 | - | 0.3 | 0.1 | - | - | - | - | - |
| *β*-Vetivenene | 1502 | - | - | - | 0.1 | - | - | - | - |
| *β*-bisabolene | 1504 | 0.3 | - | - | - | - | - | - | - |
| *epi*-Zonarene | 1505 | 8.2 | 5 | 0.7 | - | - | - | - | - |
| *α*-Alaskene | 1507 | - | 0.8 | 0.5 | - | - | - | - | - |
| *α*-cadinene | 1510 | 0.2 | - | - | - | 1 | - | - | - |
| *γ*-Cadinene | 1511 | - | - | - | - | 0.3 | - | - | - |
| *δ*-Cadinene | 1513 | - | - | - | - | 7.4 | - | - | - |
| *β*-Curcumene | 1515 | - | - | - | - | 2.7 | - | - | - |
| *trans*-Calamenene | 1516 | - | - | - | 1.9 | - | - | - | - |
| *cis*-Calamenene | 1521 | 8.2 | - | - | - | - | - | - | - |
| α-Dehydro-ar-himachalene | 1533 | - | - | - | 0.3 | - | - | - | - |
| (*Z*)-Cadina-1.4-diene | 1534 | - | - | - | 0.2 | 0.4 | - | - | - |
| *α*-Calacorene | 1545 | 0.5 | - | - | 0.1 | 0.1 | - | - | - |
| Germacrene B | 1553 | - | - | - | - | 0.2 | - | - | - |
| Italicene | 1560 | - | - | - | - | 1.4 | - | - | - |
| *β*-Calacorene | 1562 | - | - | - | 0.4 | - | - | - | - |
| Oxygenated sesquiterpenes | | | | | | | | | |
| Caryophyllene oxide | 1572 | - | - | - | 0.2 | - | - | - | - |
| Spathulenol | 1578 | 0.2 | - | - | t | - | - | - | - |
| Caryophyllene oxide | 1581 | 0.6 | - | - | - | - | - | - | - |
| Cedrol | 1600 | 1.2 | - | - | - | 0.5 | - | - | - |
| α-Colocalene | 1616 | - | - | - | t | - | - | - | - |
| 1,10-Di-epi-cubenol | 1617 | - | - | - | 0.3 | 0.4 | - | - | - |
| 1-*epi*-Cubenol | 1627 | - | - | - | - | 0.7 | - | - | - |
| *β*-Acoradiene | 1628 | - | - | - | 0.3 | - | - | - | - |
| di-epi-*α*-cedrene | 1633 | 4.9 | - | - | - | - | - | - | - |
| *β*-Eudesmol | 1650 | - | - | - | 0.4 | - | - | - | - |
| *α*-Cadinol | 1654 | - | - | - | - | 3.9 | - | - | - |
| Cadalene | 1674 | - | - | - | 0.1 | - | - | - | - |
| *α*-Bisabolol | 1687 | - | - | - | - | 0.5 | - | - | - |
| *cis*-14-nor-Muurol-5-en-4-one | 1689 | - | - | - | 1.8 | - | - | - | - |
| 14-Norcadin-5-en-4-one | 1697 | 0.9 | - | - | - | - | - | - | - |
| 10-nor-Calamenen-10-one | 1699 | - | - | - | 0.1 | - | - | - | - |
| (*Z*)-5-Hydroxy-calamenene | 1823 | - | - | - | t | - | - | - | - |
| Diterpene hydrocarbons | | | | | | | | | |
| Isopimara-9-(11),15-diene | 1906 | - | - | - | 0.14 | t | - | - | - |
| Sandaracopimara-8(14),15-diene | 1960 | - | - | - | 0.22 | - | - | - | - |
| Oxygenated diterpenes | | | | | | | | | |
| *epi*-Manoyloxide | 1987 | - | - | - | 0.2 | 0.2 | - | - | - |
| Kaur-15-ene | 1997 | 0.2 | - | - | t | - | - | - | - |
| Abietadiene | 2080 | - | - | - | 0.1 | 0.1 | 2.9 | - | - |
| Nezukol | 2080 | - | - | - | 0.6 | 0.2 | - | - | - |
| *cis*-Ferruginol | 2255 | - | - | - | - | 0.1 | - | - | - |
| *trans*-Totarol | 2314 | - | - | - | t | 0.2 | - | - | - |
| Total monoterpene hydrocarbons (%) | | 5.6 | 17.7 | 23.7 | 47.66 | 37.4 | 66.2 | 29.9 | 88.7 |
| Total oxygenated monoterpenes (%) | | 23.1 | 32.9 | 28.3 | 36.3 | 15.7 | 25.2 | 24.8 | 5.7 |
| Total sesquiterpene hydrocarbons (%) | | 45.9 | 27.2 | 11.8 | 8.19 | 20.6 | 0 | 29.9 | 1.4 |
| Total oxygenated sesquiterpenes | | 7.8 | 0 | 0 | 3.2 | 6 | 0 | 0 | 0 |
| Diterpene hydrocarbons | | 0 | 0 | 0 | 0.36 | 0 | 0 | 0 | 0 |
| Oxygenated Diterpenes | | 0.2 | 0 | 0 | 0.9 | 0.8 | 2.9 | 0 | 0 |
| Total identified | | 82.6 | 77.8 | 63.8 | 96.61 | 80.5 | 94.3 | 84.6 | 95.8 |

t Detected in traces (<0.1), – not detected

a Relative retention indices calculated from the retention times of the compounds in relation to

those of a series of n-alkanes (C8–C25) analyzed under the same chromatographic conditions

b Plant code according to table 1

c Leaves before flowering

d Leaves at flowering stage

**Table S3: Major constituents present in *Pinus canariensis* oils**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Compound | RRIa | Plant Codeb | | | | | | | | |
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| Monoterpene hydrocarbons | | | | | | | | | | |
| Tricyclene | 925 | t | t | - | t | - | t | - | t | - |
| *α-*Thujene | 930 | - | - | - | - | - | - | t | - | - |
| *α*-Pinene | 939 | 1 | 23.1 | 5.2 | 15 | 13.6 | 14.6 | 14 | 72.3 | - |
| *α*-Fenchene | 944 | - | t | - | - | - | - | - | - | - |
| Thuja-2,4(10)-diene | 954 | - | - | - | - | - | - | - | - | - |
| Camphene | 954 | t | 0.3 | - | 0.4 | - | t | 0.3 | 1.5 | - |
| Banzaldehyde | 962 | - | - | - | - | - | - | - | - | - |
| Sabinene | 975 | t | t | - | t | - | t | 0.02 | - | 2.4 |
| *β*-Pinene | 979 | 0.1 | 1.6 | - | 2.1 | 1.6 | 31.2 | 1.8 | 15.7 | 1.9 |
| Myrcene | 990 | 1.3 | 5.8 |  | 1 | 3.8 | 2.6 | 8.8 | 1.7 | 4.5 |
| *α*-Phellandrene | 1005 | t | t | - | - | - | 0.1 | - | 0.03 | 1.9 |
| *δ*-3-Carene | 1011 | - | - | - | - | t | - | t | - | - |
| *O*-Cymene | 1014 | - | - | - | - | - | - | 0.9 | t | - |
| *δ*-2-Carene | 1015 | - | - | - | - | - | - | - | - | - |
| *α*-Terpinene | 1017 | - | t | - | - | - | t | t | t | - |
| *p*-Cymene | 1024 | - | t | - | - | - | - | - | - | 5.2 |
| Sylvestrene | 1027 | - | - | - | - | - | 1.6 | - | 3.3 | 2.1 |
| *Z*-*β*-Ocimene | 1028 | - | t | - | - | - | 0.1 | - | - | - |
| Limonene | 1029 | 3.5 | 10.1 | 0.8 | 0.5 | 21.9 | - | 1.4 | - | 10.8 |
| 2-Heptyl acetate | 1035 | - | - | - | - | - | - | - | - | - |
| *β*-Phellandrene | 1038 | - | 0.7 | - | 0.5 | - | - | t | - | - |
| *α*-Terpinolene | 1043 | t | 0.2 | - | t | 0.1 | t | - | 0.3 | - |
| *E*-*β*-Ocimene | 1051 | t | 0.1 | - | 0.2 | 0.7 | 0.6 | - | 0.3 | - |
| γ-Terpinene | 1055 | t | t | - | t | - | - | 0.1 | t | 1.1 |
| Dehydro-*p*-cymene | 1073 | - | t | - | - | - | - | - | - | - |
| Oxygenated monoterpenes | | | | | | | | | | |
| Isocineole | 1006 | - | t | - | - | - | - | - | - | - |
| 1,8-cineole | 1022 | - | - | - | - | - | - | - | - | 4.2 |
| *trans*-Linalool oxide (furanoid) | 1080 | t | - | - | - | - | - | - | - | - |
| Linalool | 1096 | - | t | - | - | - | - | t | - | 2.7 |
| *endo*-Fenchol | 1101 | - | t | - | - | - | - | - | - | - |
| *α*-Campholenal | 1107 | - | t | - | - | - | - | - | - | - |
| Fenchol | 1114 | - | - | - | - | - | - | t | t | - |
| Pinocarvone | 1143 | - | t | - | - | - | - | - | - | - |
| Camphor | 1146 | t | t | 2 | - | - | - | - | - | - |
| *trans*-*β*-Terpineol | 1151 | t | - | - | - | - | - | - | - | - |
| Myrtenal | 1168 | t | - | - | - | - | - | - | - | - |
| Borneol | 1169 | - | t | - | - | - | - | t | - | - |
| Terpinen-4-ol | 1177 | 0.1 | t | - | - | - | - | t | - | - |
| *p*-Cymen-8-ol | 1179 | - | - | - | - | 0.1 | - | - | - | - |
| Myrtenol | 1182 | - | t | - | - | - | - | - | - | - |
| *α*-Terpineol | 1189 | t | 0.2 | - | 0.2 | - | - | 0.75 | 1.4 | - |
| Linalyl acetate | 1259 | - | t | - | - | - | - | - | - | - |
| Bornyl acetate | 1285 | t | 0.4 | - | 0.4 | - | t | - | 0.4 | - |
| Terpin-4-yl acetate | 1332 | - | - | - | - | - | - | 0.2 | - | - |
| Citronellyl acetate | 1332 | t | - | - | - | - | - | - | - | - |
| *α*-Terpinene | 1342 | - | - | - | - | - | - | - | - | 2.3 |
| *α*-cubebene | 1346 | - | t | - | - | - | 0.2 | - | - | - |
| *α*-Terpinyl acetate | 1350 | t | 0.1 | - | t | 0.2 | t | - | - | - |
| *α*-Terpineol acetate | 1352 | - | - | - | - | - | - | - | t | - |
| Geranyl acetate | 1355 | t | - | - | - | - | - | 0.4 | - | - |
| Sesquiterpene hydrocarbons | | | | | | | | | | |
| *α*-Ylangene | 1358 | 0.1 | t | - | t | - | 0.1 | - | - | - |
| *α*-Copaene | 1376 | - | 0.1 | - | 0.4 | - | 0.3 | - | - | - |
| *β*-Bourbonene | 1384 | 0.3 | 0.2 | - | 0.6 | - | 0.4 | - | - | - |
| *β*-Cubebene | 1388 | t | 0.6 | - | - | - | - | - | - | - |
| *β*-Elemene | 1390 | - | 0.2 | - | 0.3 | - | 0.2 | - | - | - |
| *β*-Caryophyllene | 1412 | 9.9 | 4.9 | 16.8 | 5.3 | - | 8.7 | t | - | - |
| Aromadendrene | 1417 | - | - | - | - | - | t | - | - | - |
| Longifolene | 1418 | - | t | - | - | - | - | - | - | - |
| *β*-Gurjunene | 1423 | t | - | - | 0.3 | - | - | - | - | - |
| *trans*-*α*-Bergamotene | 1427 | 0.1 | - | - | - | - | - | - | - | - |
| *E*-Caryophyllene | 1429 | - | - | - | - | 8 | - | - | 0.8 | - |
| *β*-Copaene | 1429 | - | - | - | - | - | 0.4 | - | - | - |
| *trans*-*β*-Farnesene | 1449 | 0.2 | - | - | - | - | - | - | - | - |
| *α*-Humulene | 1454 | 1.9 | 1.1 | 1.4 | 0.5 | 1.5 | 1.8 | 1.4 | 0.1 | - |
| *cis*-*β*-Guaiene | 1468 | - | - | - | - | - | 0.3 | - | - | - |
| *α*-Amorphene | 1481 | - | - | - | - | 0.3 | - | - | - | - |
| *γ*-Muurolene | 1481 | - | 0.5 | - | t | - | t | - | t | - |
| *γ-*Amorphene | 1483 | - | - | - | - | 12.1 | 0.8 | - | - | - |
| Germacrene D | 1485 | - | 35.7 | 62.5 | 55.8 | 24.6 | 44 | 50.5 | 1.1 | - |
| *β*-Selinene | 1486 | - | - | - | - | 0.4 | - | - | - | - |
| Phenylethyl 3-methylbutanoate | 1487 | - | - | - | - | 0.2 | - | - | - | - |
| *β*-Selinene | 1490 | 63.7 | - | - | - | - | - | - | - | - |
| *δ*-Amorphene | 1491 | - | - | - | 0.6 | - | 0.4 | - | - | - |
| *α*-Farnesene | 1496 | - | 0.5 | - | - | - | - | - | - | - |
| *α*-Muurolene | 1498 | 1.1 | 1 | 1.3 | 1.4 | - | 1 | 0.9 | - | - |
| *β*-bisabolene | 1504 | 0.8 | - | - | - | - | - | - | - | - |
| *β*-Cadinene | 1508 | - | 0.2 | - | - | - | - | - | - | - |
| *α*-cadinene | 1510 | - | 0.1 | - | 0.2 | - | 0.1 | - | - | - |
| *trans*-Cadina-1,4-diene | 1510 | - | - | - | - | - | t | - | - | - |
| *γ*-Cadinene | 1511 | - | 0.5 | - | 1.4 | - | 1.5 | - | t | - |
| *δ*-Cadinene | 1513 | 1.3 | 1.4 | 5.6 | 4.2 | - | 4.1 | 3.2 | t | - |
| Epizonarene | 1526 | - | 0.1 | - | - | - | - | - | - | - |
| (*Z*)-Cadina-1,4-diene | 1534 | - | - | - | t | - | - | - | - | - |
| Oxygenated sesquiterpenes | | | | | | | | | | |
| *cis*-Nerolidol | 1509 | 3.3 | - | - | - | - | - | - | - | - |
| *cis*-*α*-Bisabolene | 1536 | - | 0.1 | - | - | - | - | - | - | - |
| *trans*-*α*-Bisabolene | 1538 | - | - | - | - | 0.1 | - | - | - | - |
| Dodecanoic acid | 1543 | - | t | - | - | - | - | - | - | - |
| Germacrene D-4-ol | 1548 | - | - | - | t | - | t | - | - | - |
| Longipinene epoxide | 1565 | 0.2 | - | - | - | - | - | - | - | - |
| *β*-Copaene-4-α-ol | 1570 | - | - | - | 0.3 | - | - | - | - | - |
| Caryophyllene oxide | 1572 | 0.9 | - | - | - | 1.6 | t | - | t | - |
| 1-endo-Bourbonanol | 1575 | - | 0.3 | - | - | - | - | - | - | - |
| Spathulenol | 1578 | - | - | - | - | 0.2 | - | - | - | - |
| Caryophyllene oxide | 1581 | - | 0.1 | - | - | - | - | - | - | - |
| Viridiflorol | 1591 | - | - | - | - | t | - | - | - | - |
| Humulene oxideII | 1608 | - | - | - | - | 0.1 | - | - | - | - |
| *γ*-Eudesmol | 1603 | t | - | - | - | - | - | 0.6 | - | - |
| 10-*epi*-*γ*-Eudesmol | 1619 | - | - | - | - | 0.1 | - | - | - | - |
| *epi-α*-Cadinol | 1622 | 0.6 | - | - | 0.4 | - | 0.3 | - | - | - |
| *α*-Muurolol | 1627 | - | - | - | 0.3 | - | 0.3 | - | - | - |
| 1-*epi*-Cubenol | 1627 | - | - | - | - | - | t | - | - | - |
| *τ* -Muurolol | 1647 | - | - | - | - | 1.1 | - | - | - | - |
| *epi*-*α*-Muurolol | 1649 | - | 1.1 | - | 0.5 | - | 0.4 | - | - | - |
| Eudesmol | 1650 | 0.6 | - | - | - | - | - | - | - | - |
| *τ*-Cadinol | 1650 | - | - | - | - | - | - | - | t | - |
| *α*-Cadinol | 1654 | 0.1 | 0.8 | - | 0.6 | - | 1.3 | - | - | - |
| 1-Tetradecanol | 1661 | - | t | - | - | - | - | - | - | - |
| Eudesma-4(15),7-dien-1*β*-ol | 1668 | - | - | - | 0.4 | - | - | - | - | - |
| *(E,E)-*Farnesol | 1702 | - | 0.1 | - | t | 0.2 | - | - | - | - |
| Benzyl benzoate | 1733 | - | t | - | t | - | - | - | - | - |
| (2*Z*,6*E*)-Farnesyl acetate | 1802 | - | - | - | 0.3 | 0.2 | - | - | - | - |
| Benzyl salicylate | 1841 | - | t | - | - | - | - | - | - | - |
| 1-Hexadecanol | 1864 | - | t | - | - | - | - | - | - | - |
| Diterpene hydrocarbons | | | | | | | | | | |
| Cembrene | 1924 | 0.1 | - | - | - | - | - | t | - | - |
| Pimaradiene | 1953 | - | - | - | - | - | t | - | - | - |
| Sandaracopimara-8(14),15-diene | 1960 | 0.7 | - | - | - | - | - | - | - | - |
| Sandaracopimaradiene | 1967 | - | t | - | - | - | - | - | - | - |
| Isopimaradiene | 2013 | - | 0.3 | - | - | - | 0.4 | - | - | - |
| Palustradiene | 2017 | - | - | - | t | - | - | - | - | - |
| Abietadiene | 2080 | - | - | - | 0.3 | - | t | - | - | - |
| Oxygenated diterpenes | | | | | | | | | | |
| Manool oxide | 1965 | - | - | - | t | - | - | - | - | - |
| 13-Epimanoyl oxide | 2030 | - | 0.1 | - | - | - | - | - | - | - |
| Thunbergol | 2046 | - | - | - | 0.7 | - | - | - | - | - |
| Phytol | 2102 | - | t | - | - | - | - | - | - | - |
| 13(16),14-Labdien-8-ol | 2107 | - | 0.1 | - | - | - | - | - | - | - |
| Abienol | 2137 | - | - | - | 0.2 | - | - | - | - | - |
| Sandaracopimarinal | 2162 | - | - | - | t | - | - | - | - | - |
| Methyl pimarate | 2243 | - | t | - | - | - | - | - | - | - |
| Methyl sandaracopimarate | 2260 | - | 0.1 | - | - | - | - | - | - | - |
| Abietal | 2290 | - | - | - | 0.3 | - | - | - | - | - |
| Methyl isopimarate | 2297 | - | 0.2 | - | 0.3 | - | 0.3 | - | - | - |
| Methyl levopimarate | 2307 | - | 0.3 | - | - | - | 0.5 | - | - | - |
| Methyl dehydroabietate | 2324 | - | t | - | t | 0.1 | t | - | - | - |
| Methyl abietate | 2380 | - | 0.1 | - | 0.4 | - | - | - | - | - |
| Methyl neoabietate | 2439 | - | 0.2 | - | 0.4 | - | - | - | - | - |
| Methyl levopimarate | 2284 | - | - | - | 0.5 | - | - | - | - | - |
| Total monoterpene hydrocarbons (%) | | 5.9 | 41.9 | 6 | 19.7 | 41.7 | 50.8 | 27.32 | 95.13 | 29.9 |
| Total oxygenated monoterpenes (%) | | 0.1 | 0.7 | 2 | 0.6 | 0.3 | 0.2 | 1.35 | 1.8 | 9.2 |
| Total sesquiterpene hydrocarbons (%) | | 79.4 | 47.1 | 87.6 | 71 | 47.1 | 64.1 | 56 | 2 | 0 |
| Total oxygenated sesquiterpenes | | 5.7 | 2.5 | 0 | 2.8 | 3.6 | 2.3 | 0.6 | 0 | 0 |
| Diterpene hydrocarbons | | 0.8 | 0.3 | 0 | 0.3 | 0 | 0.4 | 0 | 0 | 0 |
| Oxygenated Diterpenes | | 0 | 1.1 | 0 | 2.8 | 0.1 | 0.8 | 0 | 0 | 0 |
| Total identified | | 91.9 | 93.6 | 95.6 | 97.2 | 92.8 | 118.6 | 85.27 | 98.93 | 39.1 |

t Detected in traces (<0.1), – not detected

a Relative retention indices calculated from the retention times of the compounds in relation to those of a series

of n-alkanes (C8–C25) analyzed under the same chromatographic conditions

b Plant code according to table 1