

Date : January 31, 2019

CERTIFICATE OF ANALYSIS – GC PROFILING

SAMPLE IDENTIFICATION

Internal code : 19A18-PTH06-1-CC

Customer identification : Frankincense Carteri Organic - Somalia - F0010589R

Type : Essential oil

Source : *Boswellia carterii* ct. Methyl decyl ether

Customer : Plant Therapy

ANALYSIS

Method: PC-PA-014-17J19 - Analysis of the composition of an essential oil, or other volatile liquid, by FAST GC-FID (in French); identifications validated by GC-MS.

Analyst : Lindsay Girard, B. Sc.

Analysis date : January 28, 2019

Checked and approved by :

Alexis St-Gelais, M. Sc., chimiste 2013-174

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PHYSICOCHEMICAL DATA

Physical aspect: Faintly yellow liquid

Refractive index: 1.4658 ± 0.0003 (20 °C)

CONCLUSION

No adulterant, contaminant or diluent has been detected using this method.

ANALYSIS SUMMARY

| Identification | DB-5 (%) | DB-WAX (%) | Classe |
|---------------------------|----------|------------|------------------------|
| 2-Methyl-3-buten-2-ol | 0.02 | 0.02 | Aliphatic alcohol |
| 3-Methyl-2-butanone | 0.01 | 0.01 | Aliphatic ketone |
| Toluene | 0.07 | 1.34* | Simple phenolic |
| Prenal | 0.01 | 6.49* | Aliphatic aldehyde |
| Methyl hexyl ether | 0.02 | 0.02 | Aliphatic ether |
| Unknown | tr* | 0.03 | Alkene |
| Furfural | [tr]* | 0.01 | Aliphatic alcohol |
| Unknown | 0.03 | 0.03 | Unknown |
| Hashishene | 1.05 | 44.99* | Monoterpene |
| Tricyclene | 0.06 | 0.06 | Monoterpene |
| α -Thujene | 1.25 | [1.34]* | Monoterpene |
| α -Pinene | 44.41 | [44.99]* | Monoterpene |
| Unknown | 0.03 | 0.04 | Monoterpene |
| Camphene | 0.67* | 0.73 | Monoterpene |
| α -Fenchene | [0.67]* | 0.02 | Monoterpene |
| Thuja-2,4(10)-diene | 0.66 | 5.18* | Monoterpene |
| meta-Cymene | 0.02 | 0.17* | Monoterpene |
| β -Pinene | 7.93* | 3.31 | Monoterpene |
| Sabinene | [7.93]* | [5.18]* | Monoterpene |
| 6-Methyl-5-hepten-2-one | 0.13 | 0.02 | Aliphatic ketone |
| Myrcene | 6.44 | 6.37 | Monoterpene |
| 6-Methyl-5-hepten-2-ol | 0.03 | 0.04 | Aliphatic alcohol |
| 2-Carene | 0.01 | 0.04 | Monoterpene |
| α -Phellandrene | 1.18 | 1.08 | Monoterpene |
| ortho-Methylanisole | 0.23* | 0.13 | Simple phenolic |
| Δ 3-Carene | [0.23]* | 0.15 | Monoterpene |
| α -Terpinene | 0.16 | [0.17]* | Monoterpene |
| ortho-Cymene | 0.03 | 2.80* | Simple phenolic |
| para-Cymene | 2.83 | [2.80]* | Monoterpene |
| Limonene | 7.21* | [6.49]* | Monoterpene |
| β -Phellandrene | [7.21]* | 0.75* | Monoterpene |
| 1,8-Cineole | [7.21]* | [0.75]* | Monoterpenic ether |
| Methyl octyl ether | 1.69 | 1.68 | Aliphatic ether |
| Cymene analog | 0.07 | 0.05 | Monoterpene |
| (Z)- β -Ocimene | 0.54 | 0.51 | Monoterpene |
| Unknown | 0.02 | | Unknown |
| (E)- β -Ocimene | 0.15 | 0.14 | Monoterpene |
| γ -Terpinene | 0.29 | 0.38 | Monoterpene |
| cis-Sabinene hydrate | 0.03 | 0.01 | Monoterpenic alcohol |
| Unknown | 0.01 | 0.02 | Oxygenated monoterpene |
| cis-Linalool oxide (fur.) | 0.01 | 0.02 | Monoterpenic alcohol |
| Octanol | 0.14 | 0.16 | Aliphatic alcohol |
| meta-Cymenene | 0.06 | 0.15 | Monoterpene |
| Isoterpinolene | 0.08 | 0.28 | Monoterpene |
| para-Cymenene | 0.16* | 0.12* | Monoterpene |
| γ -Campholenal | [0.16]* | 0.01 | Aliphatic alcohol |
| Terpinolene | [0.16]* | 0.09 | Monoterpene |
| 6,7-Epoxyterpinolene | 0.06 | 0.04 | Monoterpenic ether |

| | | | |
|----------------------------------|---------|---------|------------------------|
| <i>trans</i> -Sabinene hydrate | 0.02 | 0.02 | Monoterpenic alcohol |
| Linalool | 0.31* | 0.18* | Monoterpenic alcohol |
| α -Thujone | [0.31]* | 0.07 | Monoterpenic ketone |
| Unknown | [0.31]* | 1.76* | Monoterpenic alcohol |
| Verbenol analog? | 0.02 | 0.03 | Monoterpenic alcohol |
| β -Thujone | 0.07 | [0.12]* | Monoterpenic ketone |
| <i>cis</i> -para-Menth-2-en-1-ol | 0.10 | [0.18]* | Monoterpenic alcohol |
| α -Campholenal | 0.33 | 0.33* | Monoterpenic aldehyde |
| Unknown | 0.01 | | Unknown |
| Methyl nonyl ether | 0.29* | [2.80]* | Aliphatic ether |
| <i>cis</i> -Limonene oxide | [0.29]* | 0.02 | Monoterpenic ether |
| <i>trans</i> -Pinocarveol | 0.65 | 0.64 | Monoterpenic alcohol |
| <i>trans</i> -Sabinol | 0.21* | 0.22* | Monoterpenic alcohol |
| <i>cis</i> -Verbenol | [0.21]* | 0.17* | Monoterpenic alcohol |
| <i>trans</i> -Verbenol | 0.63 | 0.64* | Monoterpenic alcohol |
| meta-Mentha-4,6-dien-8-ol | 0.19 | [0.17]* | Monoterpenic alcohol |
| Pinocamphone | 0.08 | 0.07 | Monoterpenic ketone |
| Pinocarvone | 0.04 | 0.05 | Monoterpenic ketone |
| Borneol | 0.09 | 0.28* | Monoterpenic alcohol |
| α -Phellandren-8-ol | 0.29 | 0.29 | Monoterpenic alcohol |
| Umbellulone | 0.04* | 0.07 | Monoterpenic ketone |
| <i>cis</i> -Sabinol | [0.04]* | 0.19* | Monoterpenic alcohol |
| Terpinen-4-ol | 0.42 | 0.43 | Monoterpenic alcohol |
| meta-Cymen-8-ol | 0.01 | 0.14* | Monoterpenic alcohol |
| Thuj-3-en-10-al | 0.04 | 0.03 | Monoterpenic aldehyde |
| para-Cymen-8-ol | 0.16 | [0.14]* | Monoterpenic alcohol |
| α -Terpineol | 0.18 | [0.28]* | Monoterpenic alcohol |
| Myrtenal | 0.24 | 0.36* | Monoterpenic aldehyde |
| Myrtenol | 0.20 | [0.19]* | Monoterpenic alcohol |
| α -Phellandrene epoxide | 0.06 | 0.07 | Monoterpenic ether |
| Verbenone | 0.44 | 0.44* | Monoterpenic ketone |
| Octyl acetate | 1.05 | 1.12* | Aliphatic ester |
| <i>trans</i> -Carveol | 0.16 | 0.22* | Monoterpenic alcohol |
| <i>cis</i> -Carveol | 0.03 | 0.03 | Monoterpenic alcohol |
| Methyl decyl ether | 5.22 | 5.30 | Aliphatic ether |
| Carvone | 0.02 | 0.03 | Monoterpenic ketone |
| Carvotanacetone | 0.08 | [0.64]* | Monoterpenic ketone |
| Piperitone | 0.12 | 0.15 | Monoterpenic ketone |
| Unknown | 0.01 | | Unknown |
| Linalyl acetate | 0.01 | 0.03 | Monoterpenic ester |
| 3,5-Dimethoxytoluene | 0.09 | [0.22]* | Simple phenolic |
| Unknown | 0.03 | | Oxygenated monoterpene |
| Decanol | 0.15 | 0.21 | Aliphatic alcohol |
| Bornyl acetate | 0.25 | 0.33 | Monoterpenic ester |
| Thymol | 0.02 | 0.03* | Monoterpenic alcohol |
| <i>cis</i> -Terpin hydrate? | 0.08 | | Monoterpenic alcohol |
| Carvacrol | 0.03 | 0.03 | Monoterpenic alcohol |
| Unknown | 0.01 | | Unknown |
| Myrtenyl acetate | 0.01 | [0.44]* | Monoterpenic ester |
| Bicycloelemene | 0.03 | [1.12]* | Sesquiterpene |
| α -Cubebene | 0.17 | 0.16 | Sesquiterpene |
| Cyclosativene I | 0.03 | [0.33]* | Sesquiterpene |

| | | | |
|--|---------|---------|--------------------------|
| Cyclosativene II | 0.05 | [0.33]* | Sesquiterpene |
| α -Copaene | 0.56 | 0.60 | Sesquiterpene |
| β -Bourbonene | 0.52 | 0.52 | Sesquiterpene |
| β -Elemene | 0.30 | [1.76]* | Sesquiterpene |
| Unknown | 0.01 | 0.01 | Unknown |
| Isocaryophyllene | 0.04 | 0.04 | Sesquiterpene |
| α -Gurjunene | 0.10 | 0.17 | Sesquiterpene |
| β -Caryophyllene | 1.52 | [1.76]* | Sesquiterpene |
| β -Copaene | 0.07 | 0.08* | Sesquiterpene |
| <i>trans</i> - α -Bergamotene | 0.08 | [0.08]* | Sesquiterpene |
| 6,9-Guaiadiene | 0.14 | [0.36]* | Sesquiterpene |
| α -Humulene | 0.32 | 0.54 | Sesquiterpene |
| allo-Aromadendrene | 0.10 | 0.16 | Sesquiterpene |
| γ -Muurolole | 0.05* | [0.44]* | Sesquiterpene |
| <i>trans</i> -Cadina-1(6),4-diene | [0.05]* | 0.04 | Sesquiterpene |
| Germacrene D | 0.22 | [0.22]* | Sesquiterpene |
| <i>trans</i> -Muurolole-4(15),5-diene | 0.13 | 0.08 | Sesquiterpene |
| δ -Selinene | 0.09 | 0.22 | Sesquiterpene |
| α -Selinene | 0.21* | 0.18 | Sesquiterpene |
| Bicyclogermacrene | [0.21]* | 0.05 | Sesquiterpene |
| α -Muurolole | 0.11 | 0.12 | Sesquiterpene |
| γ -Cadinene | 0.17 | 0.18 | Sesquiterpene |
| Cubebol | 0.18 | 0.17 | Sesquiterpenic alcohol |
| Zonarene | 0.48* | 0.04 | Sesquiterpene |
| δ -Cadinene | [0.48]* | 0.43 | Sesquiterpene |
| <i>trans</i> -Calamenene | [0.48]* | 0.01 | Sesquiterpene |
| α -Cadinene | 0.02 | 0.01 | Sesquiterpene |
| Isocaryophyllene epoxide B | 0.05 | 0.02 | Sesquiterpenic ether |
| Germacrene B | 0.10 | 0.11 | Sesquiterpene |
| Palustrol | 0.01 | 0.02 | Sesquiterpenic alcohol |
| Unknown | 0.01 | | Oxygenated sesquiterpene |
| Germacrene D-4-ol | 0.02 | 0.02 | Sesquiterpenic alcohol |
| Caryophyllene oxide | 0.27* | 0.26 | Sesquiterpenic ether |
| Caryophyllene oxide isomer | [0.27]* | 0.03 | Sesquiterpenic ether |
| Viridiflorol | 0.34 | 0.34 | Sesquiterpenic alcohol |
| Copaborneol | 0.13 | 0.07 | Sesquiterpenic alcohol |
| Humulene epoxide II | 0.06 | 0.06 | Sesquiterpenic ether |
| 10-epi-Cubenol | 0.18 | | Sesquiterpenic alcohol |
| 1-epi-Cubenol | 0.04 | 0.02 | Sesquiterpenic alcohol |
| τ -Cadinol | 0.12* | 0.10 | Sesquiterpenic alcohol |
| τ -Muurolole | [0.12]* | [0.03]* | Sesquiterpenic alcohol |
| α -Muurolole | 0.07* | 0.02 | Sesquiterpenic alcohol |
| β -Eudesmol | [0.07]* | 0.06 | Sesquiterpenic alcohol |
| α -Cadinol | 0.02 | 0.02 | Sesquiterpenic alcohol |
| Dihydroeudesmol | 0.01 | 0.01 | Sesquiterpenic alcohol |
| <i>cis</i> -Calamenen-10-ol | 0.01 | 0.01 | Sesquiterpenic alcohol |
| (3 <i>Z</i>)-Caryophylla-3,8(13)-dien-5 β -ol | 0.02 | 0.02 | Sesquiterpenic alcohol |
| Shyobunol | 0.01 | 0.02* | Sesquiterpenic alcohol |
| α -Phellandrene dimer I | 0.01 | 0.01 | Diterpene |
| α -Phellandrene dimer II | 0.06 | 0.06 | Diterpene |
| α -Phellandrene dimer III | 0.01 | 0.02 | Diterpene |
| α -Phellandrene dimer IV | 0.01 | 0.01 | Diterpene |

| | | | |
|------------------------------|---------------|---------------|--------------------|
| Unknown | 0.01 | | Unknown |
| (3E)-Cembrene A | 0.13 | 0.11 | Diterpene |
| Verticilla-4(20),7,11-triene | 0.04* | [0.02]* | Diterpene |
| Cembrene C | [0.04]* | | Diterpene |
| Cembrenol | 0.05 | 0.07 | Diterpenic alcohol |
| Serratol | 0.36* | 0.33 | Diterpenic alcohol |
| Incensele | [0.36]* | 0.10 | Diterpenic alcohol |
| Total identified | 97.91% | 97.00% | |

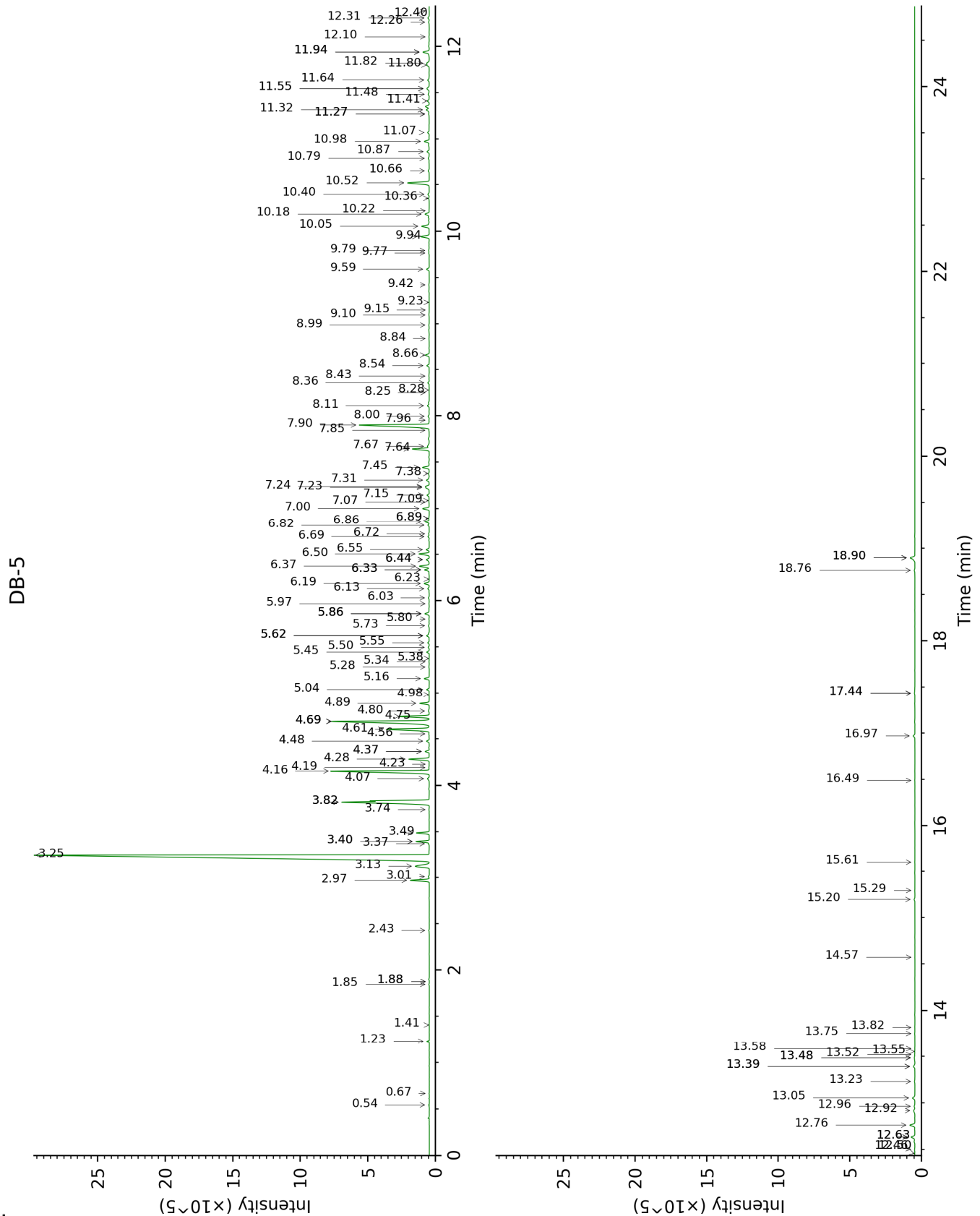
*: Two or more compounds are coeluting on this column

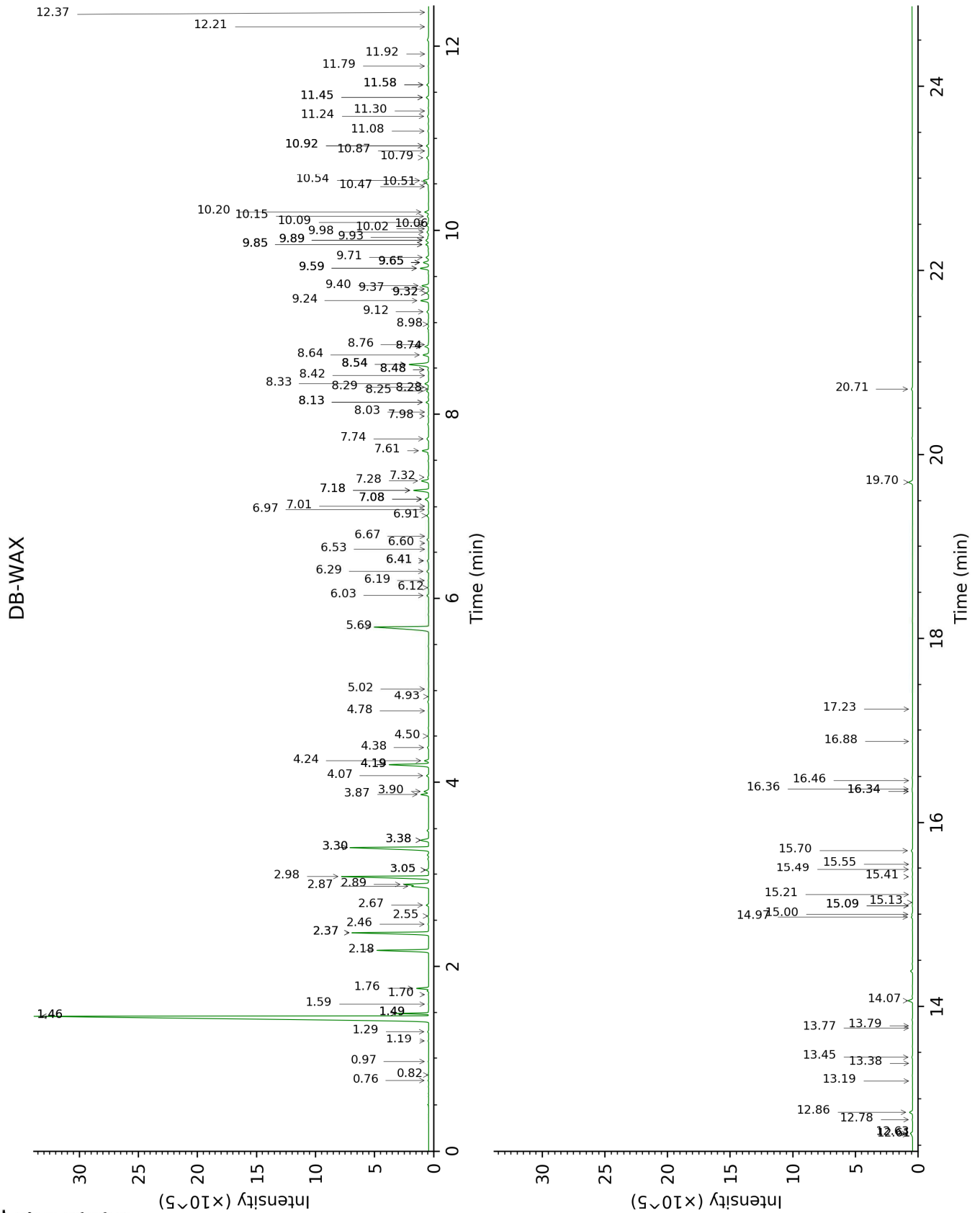
[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

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FULL ANALYSIS DATA

| Identification | Column DB-5 | | | Column DB-WAX | | |
|--|-------------|------|--------|---------------|------|---------|
| | R.T | R.I | % | R.T | R.I | % |
| 2-Methyl-3-buten-2-ol | 0.54 | 605 | 0.02 | 1.59 | 1014 | 0.02 |
| 3-Methyl-2-butanone | 0.67 | 645 | 0.01 | 0.82 | 903 | 0.01 |
| Toluene | 1.23 | 756 | 0.07 | 1.49* | 1004 | 1.34 |
| Prenal | 1.41 | 780 | 0.01 | 3.30* | 1162 | 6.49 |
| Methyl hexyl ether | 1.85 | 826 | 0.02 | 0.97 | 928 | 0.02 |
| Unknown [m/z 109, 67 (32), 81 (14), 41 (12), 124 (10)] | 1.88* | 828 | tr | 0.76 | 885 | 0.03 |
| Furfural | 1.88* | 828 | [tr] | 6.67 | 1407 | 0.01 |
| Unknown [m/z 79, 78 (45), 91 (28), 77 (28), 41 (13), 80 (12), 107 (11)... 122 (1)] | 2.43 | 873 | 0.03 | 1.19 | 960 | 0.03 |
| Hashishene | 2.97 | 915 | 1.05 | 1.46* | 1001 | 44.99 |
| Tricyclene | 3.01 | 917 | 0.06 | 1.30 | 976 | 0.06 |
| α-Thujene | 3.13 | 925 | 1.25 | 1.49* | 1004 | [1.34] |
| α-Pinene | 3.25 | 933 | 44.41 | 1.46* | 1001 | [44.99] |
| Unknown [m/z 91, 92 (47), 65 (11)... 134 (1)] | 3.37 | 941 | 0.03 | 2.46 | 1096 | 0.04 |
| Camphene | 3.40* | 943 | 0.67 | 1.76 | 1030 | 0.73 |
| α-Fenchene | 3.40* | 943 | [0.67] | 1.70 | 1023 | 0.02 |
| Thuja-2,4(10)-diene | 3.49 | 949 | 0.66 | 2.37* | 1087 | 5.18 |
| meta-Cymene | 3.74 | 965 | 0.02 | 3.05* | 1142 | 0.17 |
| β-Pinene | 3.82*† | 970 | 7.93 | 2.18 | 1068 | 3.31 |
| Sabinene | 3.82*† | 970 | [7.93] | 2.37* | 1087 | [5.18] |
| 6-Methyl-5-hepten-2-one | 4.07 | 987 | 0.13 | 5.02 | 1296 | 0.02 |
| Myrcene | 4.16 | 993 | 6.44 | 2.98 | 1137 | 6.37 |
| 6-Methyl-5-hepten-2-ol | 4.19 | 995 | 0.03 | 6.97 | 1429 | 0.04 |
| 2-Carene | 4.23 | 998 | 0.01 | 2.55 | 1103 | 0.04 |
| α-Phellandrene | 4.28 | 1001 | 1.18 | 2.87 | 1128 | 1.08 |
| ortho-Methylanisole | 4.37* | 1006 | 0.23 | 6.03 | 1360 | 0.13 |
| Δ3-Carene | 4.37* | 1006 | [0.23] | 2.66 | 1112 | 0.15 |
| α-Terpinene | 4.48 | 1013 | 0.16 | 3.05* | 1142 | [0.17] |
| ortho-Cymene | 4.56 | 1018 | 0.03 | 4.19* | 1232 | 2.80 |
| para-Cymene | 4.61 | 1021 | 2.83 | 4.19* | 1232 | [2.80] |
| Limonene | 4.69* | 1027 | 7.21 | 3.30* | 1162 | [6.49] |
| β-Phellandrene | 4.69* | 1027 | [7.21] | 3.38*† | 1168 | 0.75 |
| 1,8-Cineole | 4.69* | 1027 | [7.21] | 3.38*† | 1168 | [0.75] |
| Methyl octyl ether | 4.75 | 1030 | 1.69 | 2.89 | 1130 | 1.68 |

| | | | | | | |
|--|-------|------|--------|-------|------|--------|
| Cymene analog | 4.80 | 1034 | 0.07 | 4.50 | 1256 | 0.05 |
| (Z)-β-Ocimene | 4.89 | 1039 | 0.54 | 3.87 | 1208 | 0.51 |
| Unknown [m/z 109, 43 (57), 91 (28), 67 (25), 93 (24), 95 (22), 77 (21), 137 (21), 41 (17), 79 (14)...] | 4.98 | 1045 | 0.02 | | | |
| (E)-β-Ocimene | 5.04 | 1049 | 0.15 | 4.07 | 1223 | 0.14 |
| γ-Terpinene | 5.16 | 1056 | 0.29 | 3.90 | 1210 | 0.38 |
| cis-Sabinene hydrate | 5.28 | 1064 | 0.03 | 7.01 | 1432 | 0.01 |
| Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)] | 5.34 | 1068 | 0.01 | 4.78 | 1277 | 0.02 |
| cis-Linalool oxide (fur.) | 5.38 | 1070 | 0.01 | 6.60 | 1401 | 0.02 |
| Octanol | 5.45 | 1074 | 0.14 | 8.25 | 1526 | 0.16 |
| meta-Cymenene | 5.50 | 1078 | 0.06 | 6.29 | 1379 | 0.15 |
| Isoterpinolene | 5.55 | 1081 | 0.08 | 4.24 | 1236 | 0.28 |
| para-Cymenene | 5.62* | 1085 | 0.16 | 6.41* | 1387 | 0.12 |
| γ-Campholenal | 5.62* | 1085 | [0.16] | 4.93 | 1289 | 0.01 |
| Terpinolene | 5.62* | 1085 | [0.16] | 4.38 | 1246 | 0.09 |
| 6,7-Epoxymyrcene | 5.73 | 1092 | 0.06 | 6.19 | 1372 | 0.04 |
| trans-Sabinene hydrate | 5.80 | 1097 | 0.02 | 8.03 | 1508 | 0.02 |
| Linalool | 5.86* | 1100 | 0.31 | 8.13* | 1517 | 0.18 |
| α-Thujone | 5.86* | 1100 | [0.31] | 6.12 | 1366 | 0.07 |
| Unknown [m/z 119, 109 (94), 43 (61), 95 (56), 91 (48), 77 (32), 152 (32), 137 (31), 134 (24)] | 5.86* | 1100 | [0.31] | 8.54* | 1549 | 1.76 |
| Verbenol analog? | 5.97 | 1107 | 0.02 | 8.42 | 1539 | 0.03 |
| β-Thujone | 6.03 | 1111 | 0.07 | 6.41* | 1387 | [0.12] |
| cis-para-Menth-2-en-1-ol | 6.13 | 1118 | 0.10 | 8.13* | 1517 | [0.18] |
| α-Campholenal | 6.19 | 1121 | 0.33 | 7.08* | 1437 | 0.33 |
| Unknown [m/z 111, 43 (22), 55 (14), 41 (12), 110 (11)...] | 6.23 | 1124 | 0.01 | | | |
| Methyl nonyl ether | 6.33* | 1131 | 0.29 | 4.19* | 1232 | [2.80] |
| cis-Limonene oxide | 6.33* | 1131 | [0.29] | 6.53 | 1396 | 0.02 |
| trans-Pinocarveol | 6.37 | 1133 | 0.65 | 9.24 | 1603 | 0.64 |
| trans-Sabinol | 6.44* | 1138 | 0.21 | 9.85* | 1653 | 0.22 |
| cis-Verbenol | 6.44* | 1138 | [0.21] | 9.32* | 1610 | 0.17 |
| trans-Verbenol | 6.50 | 1142 | 0.63 | 9.59* | 1632 | 0.64 |

| | | | | | | |
|---|-------|------|--------|--------|------|--------|
| meta-Mentha-4,6-dien-8-ol | 6.55 | 1145 | 0.19 | 9.32* | 1610 | [0.17] |
| Pinocamphone | 6.69 | 1154 | 0.08 | 7.32 | 1455 | 0.07 |
| Pinocarvone | 6.72 | 1156 | 0.04 | 7.98 | 1505 | 0.05 |
| Borneol | 6.82 | 1162 | 0.09 | 9.89* | 1657 | 0.28 |
| α-Phellandren-8-ol | 6.86 | 1165 | 0.29 | 10.20 | 1682 | 0.29 |
| Umbellulone | 6.89* | 1167 | 0.04 | 8.98 | 1583 | 0.07 |
| cis-Sabinol | 6.89* | 1167 | [0.04] | 10.92* | 1743 | 0.19 |
| Terpinen-4-ol | 7.00 | 1174 | 0.42 | 8.64 | 1557 | 0.43 |
| meta-Cymen-8-ol | 7.07 | 1179 | 0.01 | 11.58* | 1799 | 0.14 |
| Thuj-3-en-10-al | 7.09 | 1180 | 0.04 | 8.76 | 1566 | 0.03 |
| para-Cymen-8-ol | 7.15 | 1184 | 0.16 | 11.58* | 1799 | [0.14] |
| α-Terpineol | 7.23 | 1189 | 0.18 | 9.89* | 1657 | [0.28] |
| Myrtenal | 7.24 | 1190 | 0.24 | 8.74* | 1564 | 0.36 |
| Myrtenol | 7.31 | 1194 | 0.20 | 10.92* | 1743 | [0.19] |
| α-Phellandrene epoxide | 7.38 | 1199 | 0.06 | 11.08 | 1756 | 0.07 |
| Verbenone | 7.45 | 1203 | 0.44 | 9.65* | 1637 | 0.44 |
| Octyl acetate | 7.64 | 1217 | 1.05 | 7.18* | 1444 | 1.12 |
| trans-Carveol | 7.67 | 1218 | 0.16 | 11.45* | 1788 | 0.22 |
| cis-Carveol | 7.85 | 1230 | 0.03 | 11.79 | 1817 | 0.03 |
| Methyl decyl ether | 7.90 | 1234 | 5.22 | 5.69 | 1335 | 5.30 |
| Carvone | 7.96 | 1238 | 0.02 | 10.02 | 1667 | 0.03 |
| Carvotanacetone | 8.00 | 1241 | 0.08 | 9.59* | 1632 | [0.64] |
| Piperitone | 8.11 | 1248 | 0.12 | 9.98 | 1664 | 0.15 |
| Unknown [m/z 109, 124 (22), 110 (11), 95 (10), 43 (6), 41 (6)...] | 8.25 | 1258 | 0.01 | | | |
| Linalyl acetate | 8.28 | 1260 | 0.01 | 8.29 | 1529 | 0.03 |
| 3,5-Dimethoxytoluene | 8.36 | 1265 | 0.09 | 11.45* | 1788 | [0.22] |
| Unknown [m/z 109, 41 (22), 81 (14), 43 (11)... 152 (4)] | 8.43 | 1270 | 0.03 | | | |
| Decanol | 8.54 | 1278 | 0.15 | 10.79 | 1732 | 0.21 |
| Bornyl acetate | 8.66 | 1286 | 0.25 | 8.33 | 1532 | 0.33 |
| Thymol | 8.84 | 1299 | 0.02 | 15.09* | 2127 | 0.03 |
| cis-Terpin hydrate? | 8.99 | 1305 | 0.08 | | | |
| Carvacrol | 9.10 | 1313 | 0.03 | 15.41 | 2158 | 0.03 |
| Unknown [m/z 69, 41 (75), 55 (58), 83 (33), 121 (33)...] | 9.15 | 1317 | 0.01 | | | |
| Myrtenyl acetate | 9.23 | 1322 | 0.01 | 9.65* | 1637 | [0.44] |
| Bicycloelemene | 9.42 | 1336 | 0.03 | 7.18* | 1444 | [1.12] |
| α-Cubebene | 9.59 | 1348 | 0.17 | 6.90 | 1424 | 0.16 |
| Cyclosativene I | 9.76 | 1360 | 0.03 | 7.08* | 1437 | [0.33] |
| Cyclosativene II | 9.79 | 1362 | 0.05 | 7.08* | 1437 | [0.33] |
| α-Copaene | 9.94 | 1373 | 0.56 | 7.28 | 1452 | 0.60 |
| β-Bourbonene | 10.05 | 1381 | 0.52 | 7.61 | 1477 | 0.52 |
| β-Elemene | 10.18 | 1390 | 0.30 | 8.54* | 1549 | [1.76] |

| | | | | | | |
|---|--------|------|--------|--------|------|--------|
| Unknown [m/z 71, 100 (92), 111 (79), 69 (46), 109 (45)...] | 10.22 | 1393 | 0.01 | 17.23 | 2349 | 0.01 |
| Isocaryophyllene | 10.36 | 1402 | 0.04 | 8.28 | 1528 | 0.04 |
| α -Gurjunene | 10.40 | 1405 | 0.10 | 7.74 | 1486 | 0.17 |
| β -Caryophyllene | 10.52 | 1414 | 1.52 | 8.54* | 1549 | [1.76] |
| β -Copaene | 10.66 | 1425 | 0.07 | 8.48* | 1544 | 0.08 |
| <i>trans</i> - α -Bergamotene | 10.79 | 1435 | 0.08 | 8.48* | 1544 | [0.08] |
| 6,9-Guaiadiene | 10.87 | 1440 | 0.14 | 8.74* | 1564 | [0.36] |
| α -Humulene | 10.98 | 1449 | 0.32 | 9.40 | 1617 | 0.54 |
| allo-Aromadendrene | 11.07 | 1456 | 0.10 | 9.12 | 1594 | 0.16 |
| γ -Muurolene | 11.27* | 1471 | 0.05 | 9.65* | 1637 | [0.44] |
| <i>trans</i> -Cadina-1(6),4-diene | 11.27* | 1471 | [0.05] | 9.37 | 1614 | 0.04 |
| Germacrene D | 11.32 | 1474 | 0.22 | 9.85* | 1653 | [0.22] |
| <i>trans</i> -Muurola-4(15),5-diene | 11.41 | 1481 | 0.13 | 9.93 | 1660 | 0.08 |
| δ -Selinene | 11.48 | 1487 | 0.09 | 9.71 | 1642 | 0.22 |
| α -Selinene | 11.55* | 1491 | 0.21 | 10.06 | 1670 | 0.18 |
| Bicyclogermacrene | 11.55* | 1491 | [0.21] | 10.09 | 1673 | 0.05 |
| α -Muurolene | 11.64 | 1498 | 0.11 | 10.15 | 1678 | 0.12 |
| γ -Cadinene | 11.80 | 1510 | 0.17 | 10.51 | 1708 | 0.18 |
| Cubebol | 11.82 | 1512 | 0.18 | 12.63 | 1892 | 0.17 |
| Zonarene | 11.94* | 1522 | 0.48 | 10.47 | 1704 | 0.04 |
| δ -Cadinene | 11.94* | 1522 | [0.48] | 10.54 | 1710 | 0.43 |
| <i>trans</i> -Calamenene | 11.94* | 1522 | [0.48] | 11.30 | 1775 | 0.01 |
| α -Cadinene | 12.10 | 1534 | 0.02 | 10.87 | 1738 | 0.01 |
| Isocaryophyllene epoxide B | 12.26 | 1547 | 0.05 | 12.21 | 1855 | 0.02 |
| Germacrene B | 12.31 | 1550 | 0.10 | 11.24 | 1770 | 0.11 |
| Palustrol | 12.40 | 1558 | 0.01 | 12.37 | 1869 | 0.02 |
| Unknown [m/z 152, 109 (61), 43 (21), 137 (16), 151 (16)... 222 (6)] | 12.46 | 1562 | 0.01 | | | |
| Germacrene D-4-ol | 12.50 | 1566 | 0.02 | 13.77 | 1998 | 0.02 |
| Caryophyllene oxide | 12.63* | 1576 | 0.27 | 12.86 | 1913 | 0.26 |
| Caryophyllene oxide isomer | 12.63* | 1576 | [0.27] | 12.78 | 1906 | 0.03 |
| Viridiflorol | 12.76 | 1586 | 0.34 | 14.07 | 2026 | 0.34 |
| Copaborneol | 12.92 | 1599 | 0.13 | 15.00 | 2118 | 0.07 |
| Humulene epoxide II | 12.96 | 1602 | 0.06 | 13.45 | 1968 | 0.06 |
| 10-epi-Cubenol | 13.05 | 1610 | 0.18 | | | |
| 1-epi-Cubenol | 13.23 | 1624 | 0.04 | 13.79 | 2000 | 0.02 |
| τ -Cadinol | 13.39* | 1638 | 0.12 | 14.97 | 2115 | 0.10 |
| τ -Muurolol | 13.39* | 1638 | [0.12] | 15.09* | 2127 | [0.03] |
| α -Muurolol | 13.48* | 1645 | 0.07 | 15.21 | 2139 | 0.02 |
| β -Eudesmol | 13.48* | 1645 | [0.07] | 15.49 | 2166 | 0.06 |

| | | | | | | |
|---|--------|---------------|--------|--------|---------------|--------|
| α-Cadinol | 13.52 | 1648 | 0.02 | 15.55 | 2173 | 0.02 |
| Dihydroeudesmol | 13.55 | 1651 | 0.01 | 15.13 | 2130 | 0.01 |
| <i>cis</i> -Calamene-10-ol | 13.58 | 1654 | 0.01 | 16.46 | 2266 | 0.01 |
| (3 <i>Z</i>)-Caryophylla-3,8(13)-dien-5β-ol | 13.75 | 1667 | 0.02 | 16.88 | 2311 | 0.02 |
| Shyobunol | 13.82 | 1673 | 0.01 | 16.34* | 2254 | 0.02 |
| α-Phellandrene dimer I | 14.57 | 1737 | 0.01 | 11.92 | 1829 | 0.01 |
| α-Phellandrene dimer II | 15.20 | 1791 | 0.06 | 12.61 | 1891 | 0.06 |
| α-Phellandrene dimer III | 15.29 | 1800 | 0.01 | 13.19 | 1944 | 0.02 |
| α-Phellandrene dimer IV | 15.61 | 1828 | 0.01 | 13.38 | 1962 | 0.01 |
| Unknown [m/z 43, 81 (45), 137 (39), 71 (39), 93 (33), 95 (32)...] | 16.49 | 1908 | 0.01 | | | |
| (3 <i>E</i>)-Cembrene A | 16.97 | 1954 | 0.13 | 15.70 | 2188 | 0.11 |
| Verticilla-4(20),7,11-triene | 17.44* | 1998 | 0.04 | 16.34* | 2254 | [0.02] |
| Cembrene C | 17.44* | 1998 | [0.04] | | | |
| Cembrenol | 18.76 | 2131 | 0.05 | 16.36 | 2257 | 0.07 |
| Serratol | 18.90* | 2145 | 0.36 | 19.70 | 2630 | 0.33 |
| Incensole | 18.90* | 2145 | [0.36] | 20.71 | 2752 | 0.10 |
| Total identified | | 97.91% | | | 97.00% | |
| Total reported | | 98.09% | | | 97.12% | |

*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken account in the identified total

†: Peaks apexes were resolved, but peaks overlapped and were summed for analysis

tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

R.T.: Retention time (minutes)

R.I.: Retention index