

**Date :** April 25, 2022

**CERTIFICATE OF ANALYSIS – GC PROFILING**

**SAMPLE IDENTIFICATION**

**Internal code :** 22D19-PTH03

**Customer identification :** Balsam Fir - Canada - BN0109R

**Type :** Essential oil

**Source :** *Abies balsamea* ct. Eastern / Low thymol

**Customer :** Plant Therapy

**ANALYSIS**

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

**Analyst :** Alexis St-Gelais, Ph. D., Chimiste 2013-174

**Analysis date :** April 26, 2022

Checked and approved by :

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Alexis St-Gelais, Ph. D., Chimiste 2013-174

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#### PHYSICOCHEMICAL DATA

**Physical aspect:** Faintly yellow liquid

**Refractive index:**  $1.4735 \pm 0.0003$  (20 °C; method PC-MAT-016)

#### CONCLUSION

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

## ANALYSIS SUMMARY – CONSOLIDATED CONTENTS

New readers of similar reports are encouraged to read table footnotes at least once.

| Identification                         | %     | Class                  |
|----------------------------------------|-------|------------------------|
| Isovaleral                             | tr    | Aliphatic aldehyde     |
| Toluene                                | 0.02  | Simple phenolic        |
| Unknown                                | tr    | Unknown                |
| Hexanal                                | 0.01  | Aliphatic aldehyde     |
| Unknown                                | tr    | Alkene                 |
| (3Z)-Hexenol                           | 0.01  | Aliphatic alcohol      |
| Hexanol                                | 0.01  | Aliphatic alcohol      |
| Santene                                | 1.55  | Normonoterpene         |
| Unknown                                | 0.01  | Normonoterpene         |
| Bornylene                              | 0.01  | Monoterpene            |
| Hashishene                             | 0.01  | Monoterpene            |
| Tricyclene                             | 0.76  | Monoterpene            |
| $\alpha$ -Thujene                      | 0.19  | Monoterpene            |
| $\alpha$ -Pinene                       | 18.71 | Monoterpene            |
| $\alpha$ -Fenchene                     | 0.08  | Monoterpene            |
| Camphene                               | 5.15  | Monoterpene            |
| Thuja-2,4(10)-diene                    | 0.09  | Monoterpene            |
| 3,7,7-Trimethylcyclohepta-1,3,5-triene | 0.07  | Monoterpene            |
| $\beta$ -Pinene                        | 28.60 | Monoterpene            |
| Sabinene                               | 0.07  | Monoterpene            |
| Unknown                                | 0.01  | Monoterpene            |
| Unknown                                | 0.01  | Unknown                |
| Myrcene                                | 1.93  | Monoterpene            |
| 2-Carene                               | 0.01  | Monoterpene            |
| $\alpha$ -Phellandrene                 | 0.16  | Monoterpene            |
| Pseudolimonene                         | 0.02  | Monoterpene            |
| $\Delta^3$ -Carene                     | 15.70 | Monoterpene            |
| (3Z)-Hexenyl acetate                   | 0.03  | Aliphatic ester        |
| $\alpha$ -Terpinene                    | 0.16  | Monoterpene            |
| meta-Cymene                            | 0.04  | Monoterpene            |
| para-Cymene                            | 0.24  | Monoterpene            |
| Limonene                               | 10.08 | Monoterpene            |
| $\beta$ -Phellandrene                  | 4.46* | Monoterpene            |
| 1,8-Cineole                            | 4.46* | Monoterpenic ether     |
| (Z)- $\beta$ -Ocimene                  | 0.01  | Monoterpene            |
| (E)- $\beta$ -Ocimene                  | 0.01  | Monoterpene            |
| $\gamma$ -Terpinene                    | 0.29  | Monoterpene            |
| Unknown                                | 0.01  | Oxygenated monoterpene |
| meta-Cymenene                          | 0.01  | Monoterpene            |
| Fenchone                               | 0.08  | Monoterpenic ketone    |
| Isoterpinolene                         | 0.05  | Monoterpene            |
| para-Cymenene                          | 0.02  | Monoterpene            |
| Terpinolene                            | 1.12  | Monoterpene            |
| $\gamma$ -Campholenal                  | 0.03  | Aliphatic alcohol      |
| $\alpha$ -Pinene oxide                 | 0.01  | Monoterpenic ether     |

|                                    |      |                        |
|------------------------------------|------|------------------------|
| Linalool                           | 0.01 | Monoterpenic alcohol   |
| $\alpha$ -Thujone                  | 0.03 | Monoterpenic ketone    |
| Nonanal                            | 0.04 | Aliphatic aldehyde     |
| endo-Fenchol                       | 0.04 | Monoterpenic alcohol   |
| $\beta$ -Thujone                   | 0.01 | Monoterpenic ketone    |
| <i>cis</i> -para-Menth-2-en-1-ol   | 0.01 | Monoterpenic alcohol   |
| $\alpha$ -Campholenal              | 0.02 | Monoterpenic aldehyde  |
| Nopinone                           | 0.02 | Normonoterpenic ketone |
| <i>cis</i> -Limonene oxide         | 0.01 | Monoterpenic ether     |
| <i>trans</i> -Pinocarveol          | 0.19 | Monoterpenic alcohol   |
| Camphor                            | 0.20 | Monoterpenic ketone    |
| <i>trans</i> -para-Menth-2-en-1-ol | 0.02 | Monoterpenic alcohol   |
| Camphene hydrate                   | 0.07 | Monoterpenic alcohol   |
| meta-Mentha-4,6-dien-8-ol          | 0.03 | Monoterpenic alcohol   |
| Isoborneol                         | 0.05 | Monoterpenic alcohol   |
| Pinocarvone                        | 0.05 | Monoterpenic ketone    |
| Borneol                            | 0.53 | Monoterpenic alcohol   |
| $\alpha$ -Phellandren-8-ol         | 0.06 | Monoterpenic alcohol   |
| Isopinocampone                     | 0.07 | Monoterpenic ketone    |
| Terpinen-4-ol                      | 0.27 | Monoterpenic alcohol   |
| Cryptone                           | 0.04 | Normonoterpenic ketone |
| para-Cymen-8-ol                    | 0.03 | Monoterpenic alcohol   |
| Myrtenal                           | 0.09 | Monoterpenic aldehyde  |
| $\alpha$ -Terpineol                | 0.71 | Monoterpenic alcohol   |
| Myrtenol                           | 0.09 | Monoterpenic alcohol   |
| <i>cis</i> -Piperitol              | 0.02 | Monoterpenic alcohol   |
| Verbenone                          | 0.03 | Monoterpenic ketone    |
| Unknown                            | 0.02 | Unknown                |
| <i>trans</i> -Piperitol            | 0.02 | Monoterpenic alcohol   |
| endo-Fenchyl acetate               | 0.04 | Monoterpenic ester     |
| <i>trans</i> -Carveol              | 0.03 | Monoterpenic alcohol   |
| Thymol methyl ether                | 0.01 | Monoterpenic ether     |
| Citronellol                        | 0.01 | Monoterpenic alcohol   |
| Unknown                            | 0.01 | Oxygenated monoterpene |
| Carvone                            | 0.02 | Monoterpenic ketone    |
| Piperitone                         | 0.08 | Monoterpenic ketone    |
| Geraniol                           | 0.01 | Monoterpenic alcohol   |
| Phellandral                        | 0.03 | Monoterpenic aldehyde  |
| Bornyl acetate                     | 4.85 | Monoterpenic ester     |
| 2-Undecanone                       | 0.02 | Aliphatic ketone       |
| <i>trans</i> -Pinocarvyl acetate   | 0.01 | Monoterpenic ester     |
| Methyl myrtenate                   | 0.01 | Monoterpenic ester     |
| Carvacrol                          | 0.02 | Monoterpenic alcohol   |
| Myrtenyl acetate                   | 0.01 | Monoterpenic ester     |
| Unknown                            | 0.02 | Unknown                |
| $\alpha$ -Longipinene              | 0.05 | Sesquiterpene          |
| Citronellyl acetate                | 0.02 | Monoterpenic ester     |
| Longicyclene                       | 0.02 | Sesquiterpene          |
| Neryl acetate                      | 0.03 | Monoterpenic ester     |
| $\alpha$ -Copaene                  | 0.02 | Sesquiterpene          |
| $\beta$ -Bourbonene                | 0.01 | Sesquiterpene          |
| Geranyl acetate                    | 0.02 | Monoterpenic ester     |

|                             |               |                        |
|-----------------------------|---------------|------------------------|
| β-Longipinene               | 0.02          | Sesquiterpene          |
| Longifolene                 | 0.28          | Sesquiterpene          |
| Methyleugenol               | 0.01          | Phenylpropanoid        |
| β-Caryophyllene             | 0.18          | Sesquiterpene          |
| β-Copaene                   | 0.01          | Sesquiterpene          |
| <i>trans</i> -α-Bergamotene | 0.02          | Sesquiterpene          |
| α-Himachalene               | 0.01          | Sesquiterpene          |
| α-Humulene                  | 0.09          | Sesquiterpene          |
| ( <i>E</i> )-β-Farnesene    | 0.03          | Sesquiterpene          |
| γ-Murolene                  | 0.02          | Sesquiterpene          |
| γ-Curcumene                 | 0.01          | Sesquiterpene          |
| β-Selinene                  | 0.02          | Sesquiterpene          |
| α-Selinene                  | 0.02          | Sesquiterpene          |
| β-Himachalene               | 0.03          | Sesquiterpene          |
| α-Murolene                  | 0.02          | Sesquiterpene          |
| δ-Amorphene                 | 0.02          | Sesquiterpene          |
| γ-Cadinene                  | 0.02          | Sesquiterpene          |
| β-Bisabolene                | 0.19          | Sesquiterpene          |
| β-Curcumene                 | 0.01          | Sesquiterpene          |
| δ-Cadinene                  | 0.04          | Sesquiterpene          |
| ( <i>E</i> )-γ-Bisabolene   | 0.01          | Sesquiterpene          |
| α-Calacorene                | 0.01          | Sesquiterpene          |
| ( <i>E</i> )-α-Bisabolene   | 0.07          | Sesquiterpene          |
| ( <i>E</i> )-Nerolidol      | 0.02          | Sesquiterpenic alcohol |
| Caryophyllene oxide         | 0.03          | Sesquiterpenic ether   |
| Humulene epoxide II         | 0.01          | Sesquiterpenic ether   |
| α-Cadinol                   | 0.01          | Sesquiterpenic alcohol |
| Manoyl oxide                | 0.02          | Diterpenic ether       |
| Manool                      | 0.01          | Diterpenic alcohol     |
| ( <i>Z</i> )-Abienol        | 0.02          | Diterpenic alcohol     |
| <b>Consolidated total</b>   | <b>99.22%</b> |                        |

\*: Individual compounds concentration could not be found due to overlapping coelutions on columns considered

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

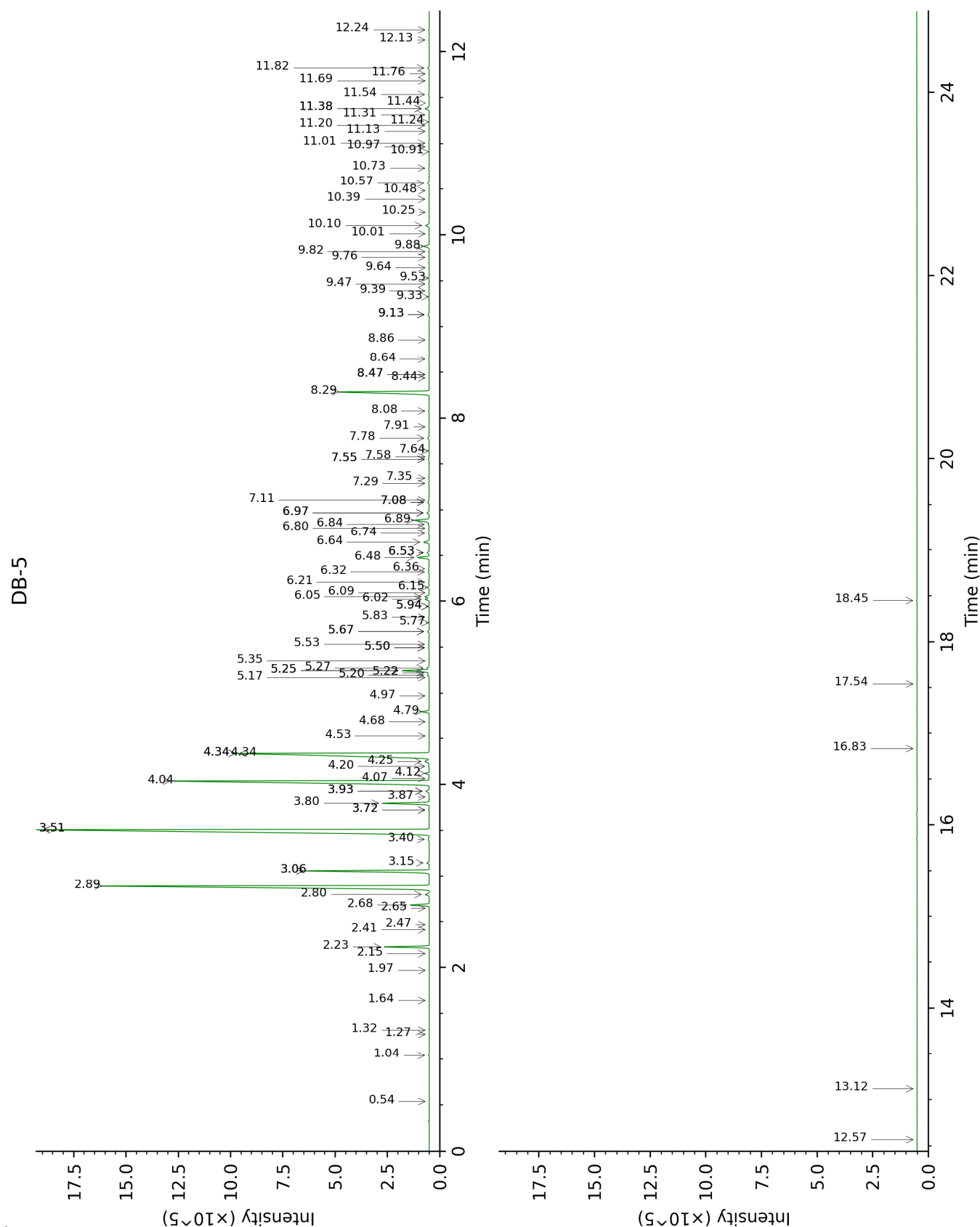
tr: The compound has been detected below 0.005% of total signal.

Note: no correction factor was applied

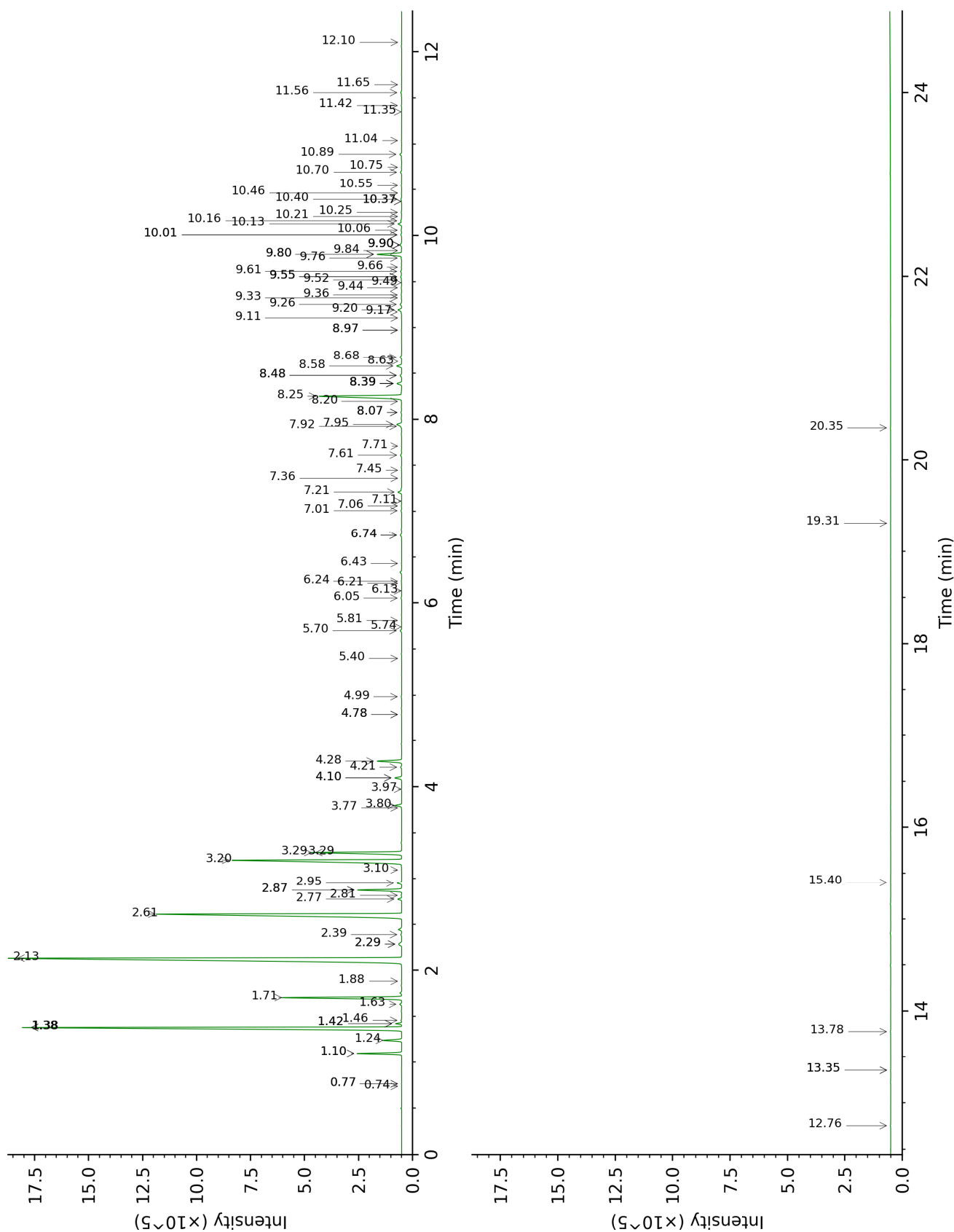
**About "consolidated" data:** The table above presents the breakdown of the sample volatile constituents after applying an algorithm to collapse data acquired from the multi-columns system of PhytoChemia into a single set of consolidated contents. In case of discrepancies between columns, the algorithm is set to prioritize data from the most standard DB-5 column, and smallest values so as to avoid overestimating individual content. This process is semi-automatic. Advanced users are invited to consult the "Full analysis data" table after the chromatograms in this report to access the full untreated data and perform their own calculations if needed.

**Unknowns:** Unknown compounds' mass spectral data is presented in the "Full analysis data" table. The occurrence of unknown compounds is to be expected in many samples, and does not denote particular problems unless noted otherwise in the conclusion.

This page was intentionally left blank. The following pages present the complete data of the analysis.



DB-WAX



# FULL ANALYSIS DATA

| Identification                                                    | Column DB-5 |      |         | Column DB-WAX |      |         |
|-------------------------------------------------------------------|-------------|------|---------|---------------|------|---------|
|                                                                   | R.T         | R.I  | %       | R.T           | R.I  | %       |
| Isovaleral                                                        | 0.54        | 642  | tr      | 0.77*         | 889  | 0.01    |
| Toluene                                                           | 1.04        | 758  | 0.02    | 1.46          | 1002 | 0.03    |
| Unknown [m/z 56, 45 (99), 41 (24), 84 (24), 69 (19), 43 (17)...]  | 1.27        | 795  | tr      | 0.77*         | 889  | [0.01]  |
| Hexanal                                                           | 1.32        | 802  | 0.01    | 1.88          | 1045 | 0.01    |
| Unknown [m/z 109, 67 (32), 81 (14), 41 (12), 124 (10)]            | 1.64        | 831  | tr      | 0.74          | 879  | tr      |
| (3Z)-Hexenol                                                      | 1.97        | 860  | 0.01    | 5.74          | 1348 | 0.01    |
| Hexanol                                                           | 2.15        | 876  | 0.01    | 5.40          | 1324 | 0.01    |
| Santene                                                           | 2.23        | 882  | 1.55    | 1.10*         | 947  | 1.56    |
| Unknown [m/z 79, 93 (66), 94 (52), 91 (39), 77 (37), 122 (31)]    | 2.41        | 899  | 0.01    | 1.42*         | 998  | 0.20    |
| Bornylene                                                         | 2.47        | 904  | 0.01    | 1.10*         | 947  | [1.56]  |
| Hashishene                                                        | 2.65        | 916  | 0.01    | 1.38*         | 994  | 18.71   |
| Tricyclene                                                        | 2.68        | 918  | 0.76    | 1.24          | 971  | 0.76    |
| $\alpha$ -Thujene                                                 | 2.80        | 926  | 0.19    | 1.42*         | 998  | [0.20]  |
| $\alpha$ -Pinene                                                  | 2.89        | 932  | 18.71   | 1.38*         | 994  | [18.71] |
| $\alpha$ -Fenchene                                                | 3.06*       | 944  | 5.23    | 1.63          | 1020 | 0.08    |
| Camphene                                                          | 3.06*       | 944  | [5.23]  | 1.71          | 1027 | 5.15    |
| Thuja-2,4(10)-diene                                               | 3.15        | 950  | 0.09    | 2.29*         | 1086 | 0.22    |
| 3,7,7-Trimethylcyclohepta-1,3,5-triene                            | 3.40        | 967  | 0.07    | 2.87*         | 1134 | 1.82    |
| $\beta$ -Pinene                                                   | 3.51*       | 974  | 28.67   | 2.13          | 1070 | 28.60   |
| Sabinene                                                          | 3.51*       | 974  | [28.67] | 2.29*         | 1086 | [0.22]  |
| Unknown [m/z 91, 119 (65), 109 (51), 134 (47)]                    | 3.72*       | 988  | 0.03    | 3.10          | 1152 | 0.01    |
| Unknown [m/z 108, 79 (86), 80 (41), 52 (38), 51 (21), 77 (20)...] | 3.72*       | 988  | [0.03]  | 7.36          | 1465 | 0.01    |
| Myrcene                                                           | 3.80        | 994  | 1.93    | 2.87*         | 1134 | [1.82]  |
| 2-Carene                                                          | 3.86        | 998  | 0.01    | 2.39          | 1096 | 0.04    |
| $\alpha$ -Phellandrene                                            | 3.93*       | 1002 | 0.19    | 2.78          | 1126 | 0.16    |
| Pseudolimonene                                                    | 3.93*       | 1002 | [0.19]  | 2.82          | 1130 | 0.02    |
| $\Delta$ 3-Carene                                                 | 4.04        | 1009 | 15.70   | 2.61          | 1113 | 15.63   |
| (3Z)-Hexenyl acetate                                              | 4.07        | 1011 | 0.03    | 4.78*         | 1281 | 0.01    |
| $\alpha$ -Terpinene                                               | 4.12        | 1015 | 0.16    | 2.95          | 1140 | 0.19    |
| meta-Cymene                                                       | 4.20        | 1020 | 0.04    | 4.10*         | 1230 | 0.32    |
| para-Cymene                                                       | 4.25        | 1023 | 0.24    | 4.10*         | 1230 | [0.32]  |
| Limonene                                                          | 4.34*       | 1028 | 14.54   | 3.20          | 1161 | 10.08   |
| $\beta$ -Phellandrene                                             | 4.34*       | 1028 | [14.54] | 3.29*         | 1167 | 4.17    |
| 1,8-Cineole                                                       | 4.34*       | 1028 | [14.54] | 3.29*         | 1167 | [4.17]  |
| (Z)- $\beta$ -Ocimene                                             | 4.53        | 1040 | 0.01    | 3.77          | 1205 | 0.01    |

|                                                                                   |        |      |        |        |      |        |
|-----------------------------------------------------------------------------------|--------|------|--------|--------|------|--------|
| (E)- $\beta$ -Ocimene                                                             | 4.68   | 1050 | 0.01   | 3.97   | 1221 | 0.01   |
| $\gamma$ -Terpinene                                                               | 4.79   | 1057 | 0.29   | 3.80   | 1207 | 0.30   |
| Unknown [m/z 79, 93 (60), 43 (40), 94 (35), 137 (33), 77 (26), 91 (20), 152 (18)] | 4.97   | 1068 | 0.01   | 4.78*  | 1281 | [0.01] |
| meta-Cymenene                                                                     | 5.17   | 1081 | 0.01   | 6.13   | 1376 | 0.01   |
| Fenchone                                                                          | 5.20   | 1083 | 0.08   | 5.70   | 1346 | 0.08   |
| Isoterpinolene                                                                    | 5.22   | 1084 | 0.05   | 4.21   | 1238 | 0.05   |
| para-Cymenene                                                                     | 5.25*† | 1086 | 1.29   | 6.24   | 1383 | 0.02   |
| Terpinolene                                                                       | 5.25*† | 1086 | [1.29] | 4.28   | 1243 | 1.12   |
| $\gamma$ -Campholenal                                                             | 5.27†  | 1087 | [1.29] | 4.98   | 1296 | 0.03   |
| $\alpha$ -Pinene oxide                                                            | 5.35   | 1092 | 0.01   |        |      |        |
| Linalool                                                                          | 5.50*  | 1101 | 0.04   | 8.08*  | 1519 | 0.04   |
| $\alpha$ -Thujone                                                                 | 5.50*  | 1101 | [0.04] | 6.05   | 1370 | 0.03   |
| Nonanal                                                                           | 5.53   | 1104 | 0.04   | 5.81   | 1353 | 0.01   |
| endo-Fenchol                                                                      | 5.67*  | 1113 | 0.08   | 8.39*  | 1542 | 0.25   |
| $\beta$ -Thujone                                                                  | 5.67*  | 1113 | [0.08] | 6.22   | 1382 | 0.01   |
| cis-para-Menth-2-en-1-ol                                                          | 5.77   | 1119 | 0.01   | 8.08*  | 1519 | [0.04] |
| $\alpha$ -Campholenal                                                             | 5.83   | 1123 | 0.02   | 7.01   | 1440 | 0.04   |
| Nopinone                                                                          | 5.94*  | 1130 | 0.03   | 8.20   | 1528 | 0.02   |
| cis-Limonene oxide                                                                | 5.94*  | 1130 | [0.03] | 6.43   | 1397 | 0.01   |
| trans-Pinocarveol                                                                 | 6.02   | 1135 | 0.19   | 9.20   | 1605 | 0.19   |
| Camphor                                                                           | 6.05   | 1137 | 0.20   | 7.21   | 1454 | 0.20   |
| trans-para-Menth-2-en-1-ol                                                        | 6.09   | 1140 | 0.02   | 8.98*  | 1587 | 0.01   |
| Camphene hydrate                                                                  | 6.15   | 1144 | 0.07   | 8.48*  | 1549 | 0.09   |
| meta-Mentha-4,6-dien-8-ol                                                         | 6.21   | 1147 | 0.03   | 9.33   | 1615 | 0.02   |
| Isoborneol                                                                        | 6.32   | 1154 | 0.05   | 9.36   | 1618 | 0.03   |
| Pinocavone                                                                        | 6.36   | 1156 | 0.05   | 7.92   | 1507 | 0.04   |
| Borneol                                                                           | 6.48   | 1164 | 0.53   | 9.80*  | 1653 | 1.24   |
| $\alpha$ -Phellandren-8-ol                                                        | 6.53*  | 1168 | 0.11   | 10.16  | 1682 | 0.06   |
| Isopinocampnone                                                                   | 6.53*  | 1168 | [0.11] | 7.61   | 1484 | 0.07   |
| Terpinen-4-ol                                                                     | 6.64   | 1175 | 0.27   | 8.58   | 1557 | 0.26   |
| Cryptone                                                                          | 6.74   | 1181 | 0.04   | 9.17   | 1603 | 0.03   |
| para-Cymen-8-ol                                                                   | 6.80   | 1185 | 0.03   | 11.56  | 1800 | 0.05   |
| Myrtenal                                                                          | 6.84†  | 1188 | 0.85   | 8.68   | 1565 | 0.09   |
| $\alpha$ -Terpineol                                                               | 6.89†  | 1191 | [0.85] | 9.80*  | 1653 | [1.24] |
| Myrtenol                                                                          | 6.97*  | 1196 | 0.12   | 10.89  | 1743 | 0.09   |
| cis-Piperitol                                                                     | 6.97*  | 1196 | [0.12] | 9.52   | 1631 | 0.02   |
| Verbenone                                                                         | 7.08*  | 1203 | 0.08   | 9.56*  | 1634 | 0.07   |
| Unknown [m/z 93, 121 (98), 79 (64), 91 (41), 77 (35), 124 (24)...]                | 7.08*  | 1203 | [0.08] | 11.04  | 1755 | 0.02   |
| trans-Piperitol                                                                   | 7.11   | 1205 | 0.02   | 10.37* | 1699 | 0.02   |
| endo-Fenchyl acetate                                                              | 7.29   | 1217 | 0.04   | 6.74*  | 1420 | 0.08   |
| trans-Carveol                                                                     | 7.35   | 1221 | 0.03   | 11.42  | 1787 | 0.02   |
| Thymol methyl ether                                                               | 7.55*  | 1235 | 0.04   | 8.48*  | 1549 | [0.09] |

|                                                                    |        |      |        |        |      |        |
|--------------------------------------------------------------------|--------|------|--------|--------|------|--------|
| Citronellol                                                        | 7.55*  | 1235 | [0.04] | 10.75  | 1731 | 0.01   |
| Unknown [m/z 137, 152 (28), 43 (25), 91 (24), 109 (23), 119 (19)]  | 7.58   | 1236 | 0.01   | 11.35  | 1782 | 0.01   |
| Carvone                                                            | 7.64   | 1241 | 0.02   | 10.01* | 1670 | 0.05   |
| Piperitone                                                         | 7.78   | 1250 | 0.08   | 9.90*  | 1661 | 0.11   |
| Geraniol                                                           | 7.91   | 1258 | 0.01   | 11.65  | 1807 | 0.01   |
| Phellandral                                                        | 8.08   | 1270 | 0.03   | 10.01* | 1670 | [0.05] |
| Bornyl acetate                                                     | 8.29   | 1284 | 4.85   | 8.25   | 1532 | 4.85   |
| 2-Undecanone                                                       | 8.44   | 1294 | 0.02   | 8.63   | 1561 | 0.01   |
| <i>trans</i> -Pinocarvyl acetate                                   | 8.48*  | 1296 | 0.02   | 9.11   | 1598 | 0.01   |
| Methyl myrtenate                                                   | 8.48*  | 1296 | [0.02] | 9.49   | 1628 | 0.01   |
| Carvacrol                                                          | 8.64   | 1308 | 0.02   | 15.40  | 2158 | 0.01   |
| Myrtenyl acetate                                                   | 8.86   | 1323 | 0.01   | 9.61   | 1638 | 0.06   |
| Unknown [m/z 121, 93 (84), 43 (81), 79 (48), 117 (40), 56 (37)...] | 9.13*  | 1342 | 0.07   |        |      |        |
| $\alpha$ -Longipinene                                              | 9.13*  | 1342 | [0.07] | 6.74*  | 1420 | [0.08] |
| Citronellyl acetate                                                | 9.33   | 1356 | 0.02   | 9.44   | 1624 | 0.03   |
| Longicyclene                                                       | 9.39   | 1361 | 0.02   | 7.06   | 1443 | 0.02   |
| Neryl acetate                                                      | 9.47   | 1366 | 0.03   | 10.25  | 1689 | 0.03   |
| $\alpha$ -Copaene                                                  | 9.53   | 1370 | 0.02   | 7.11   | 1447 | 0.01   |
| $\beta$ -Bourbonene                                                | 9.64   | 1378 | 0.01   | 7.45   | 1472 | 0.01   |
| Geranyl acetate                                                    | 9.76   | 1386 | 0.02   | 10.55  | 1714 | 0.02   |
| $\beta$ -Longipinene                                               | 9.82   | 1391 | 0.02   | 7.71   | 1491 | 0.02   |
| Longifolene                                                        | 9.88   | 1395 | 0.28   | 7.95   | 1509 | 0.28   |
| Methyleugenol                                                      | 10.01  | 1404 | 0.01   | 13.35* | 1960 | 0.01   |
| $\beta$ -Caryophyllene                                             | 10.10  | 1411 | 0.18   | 8.39*  | 1542 | [0.25] |
| $\beta$ -Copaene                                                   | 10.25  | 1422 | 0.01   | 8.39*  | 1542 | [0.25] |
| <i>trans</i> - $\alpha$ -Bergamotene                               | 10.39  | 1432 | 0.02   | 8.39*  | 1542 | [0.25] |
| $\alpha$ -Himachalene                                              | 10.48  | 1440 | 0.01   | 8.98*  | 1587 | [0.01] |
| $\alpha$ -Humulene                                                 | 10.57  | 1446 | 0.09   | 9.26   | 1610 | 0.08   |
| ( <i>E</i> )- $\beta$ -Farnesene                                   | 10.73  | 1458 | 0.03   | 9.56*  | 1634 | [0.07] |
| $\gamma$ -Murolene                                                 | 10.91  | 1471 | 0.02   | 9.56*  | 1634 | [0.07] |
| $\gamma$ -Curcumene                                                | 10.97  | 1476 | 0.01   | 9.66   | 1642 | 0.02   |
| $\beta$ -Selinene                                                  | 11.01  | 1478 | 0.02   | 9.84   | 1656 | 0.01   |
| $\alpha$ -Selinene                                                 | 11.14  | 1488 | 0.02   | 9.90*  | 1661 | [0.11] |
| $\beta$ -Himachalene                                               | 11.20  | 1493 | 0.03   | 9.76   | 1650 | 0.02   |
| $\alpha$ -Murolene                                                 | 11.24  | 1496 | 0.02   | 10.06  | 1674 | 0.03   |
| $\delta$ -Amorphene                                                | 11.32  | 1501 | 0.02   | 9.90*  | 1661 | [0.11] |
| $\gamma$ -Cadinene                                                 | 11.38* | 1507 | 0.22   | 10.37* | 1699 | [0.02] |
| $\beta$ -Bisabolene                                                | 11.38* | 1507 | [0.22] | 10.13  | 1680 | 0.19   |
| $\beta$ -Curcumene                                                 | 11.44  | 1511 | 0.01   | 10.21  | 1686 | 0.01   |
| $\delta$ -Cadinene                                                 | 11.54  | 1519 | 0.04   | 10.40  | 1701 | 0.04   |
| ( <i>E</i> )- $\gamma$ -Bisabolene                                 | 11.68  | 1530 | 0.01   | 10.46  | 1707 | 0.02   |
| $\alpha$ -Calacorene                                               | 11.76  | 1536 | 0.01   | 12.10  | 1847 | 0.01   |
| ( <i>E</i> )- $\alpha$ -Bisabolene                                 | 11.82  | 1541 | 0.07   | 10.70  | 1726 | 0.07   |
| ( <i>E</i> )-Nerolidol                                             | 12.13  | 1565 | 0.02   | 13.78  | 2000 | 0.02   |

|                         |               |      |      |               |      |        |
|-------------------------|---------------|------|------|---------------|------|--------|
| Caryophyllene oxide     | 12.24         | 1574 | 0.03 | 12.76         | 1905 | 0.02   |
| Humulene epoxide II     | 12.57         | 1600 | 0.01 | 13.35*        | 1960 | [0.01] |
| $\alpha$ -Cadinol       | 13.12         | 1645 | 0.01 |               |      |        |
| Manoyl oxide            | 16.83         | 1975 | 0.02 |               |      |        |
| Manool                  | 17.54         | 2045 | 0.01 | 19.31         | 2585 | 0.01   |
| (Z)-Abienol             | 18.45         | 2136 | 0.02 | 20.35         | 2711 | 0.02   |
| <b>Total identified</b> | <b>99.42%</b> |      |      | <b>98.63%</b> |      |        |
| <b>Total reported</b>   | <b>99.46%</b> |      |      | <b>98.68%</b> |      |        |

\*: Two or more compounds are coeluting on this column

[xx]: Duplicate percentage due to coelutions, not taken into account in the consolidated 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