



# PLANT THERAPY

100% PURE ESSENTIAL OILS

## GC/MS BATCH NUMBER: F00100

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**ESSENTIAL OIL:** FRANKINCENSE ORGANIC  
**BOTANICAL NAME:** BOSWELLIA CARTERI  
**ORIGIN:** SOMALIA

| KEY CONSTITUENTS IN THIS BATCH OF ORGANIC FRANKINCENSE CARTERI OIL | %    |
|--|------|
| 1-METHOXY DECANE   | 22.5 |
| $\alpha$ -PINENE   | 20.0 |
| p-CYMENE   | 3.4  |
| LIMONENE   | 3.3  |
| SABINENE   | 3.1  |
| 1-METHOXY OCTANE   | 2.9  |
| VIRIDIFLOROL   | 2.8  |
| OCTYL ACETATE  | 2.4  |
| $\beta$ -BOURBONENE  | 2.1  |
| INCENSYL ACETATE   | 1.6  |
| $\alpha$ -COPAENE  | 1.4  |
| TERPINEN-4-OL  | 1.3  |
| $\alpha$ -THUJENE  | 1.3  |
| $\beta$ -MYRCENE   | 1.1  |

Comments from Robert Tisserand: This US distilled frankincense oil has an excellent odor profile, and an unusual but acceptable chemical profile.

**CUSTOMER :**

**PLANT THERAPY  
126 Locust Street South  
Twin Falls, ID 83 301  
USA**

**Sample nature:** ESSENTIAL OIL  
**Botanical species:** BOSWELLIA CARTERII  
**Reference name:** FRANKINCENSE ORGANIC  
**Batch number:** F00100  
**Origin:** SOMALIA  
**Part:** GUM  
**Pyre<sup>e</sup>ssences reference:** A297  
**Date of reception:** 04/04/2014  
**Date analysis:** 05/28/2014  
**Packaging:** Amber flask of 5 ml – ambient temperature  
**Analysis:** Classic

**Validated report by :**

**Daniel DANTIN**



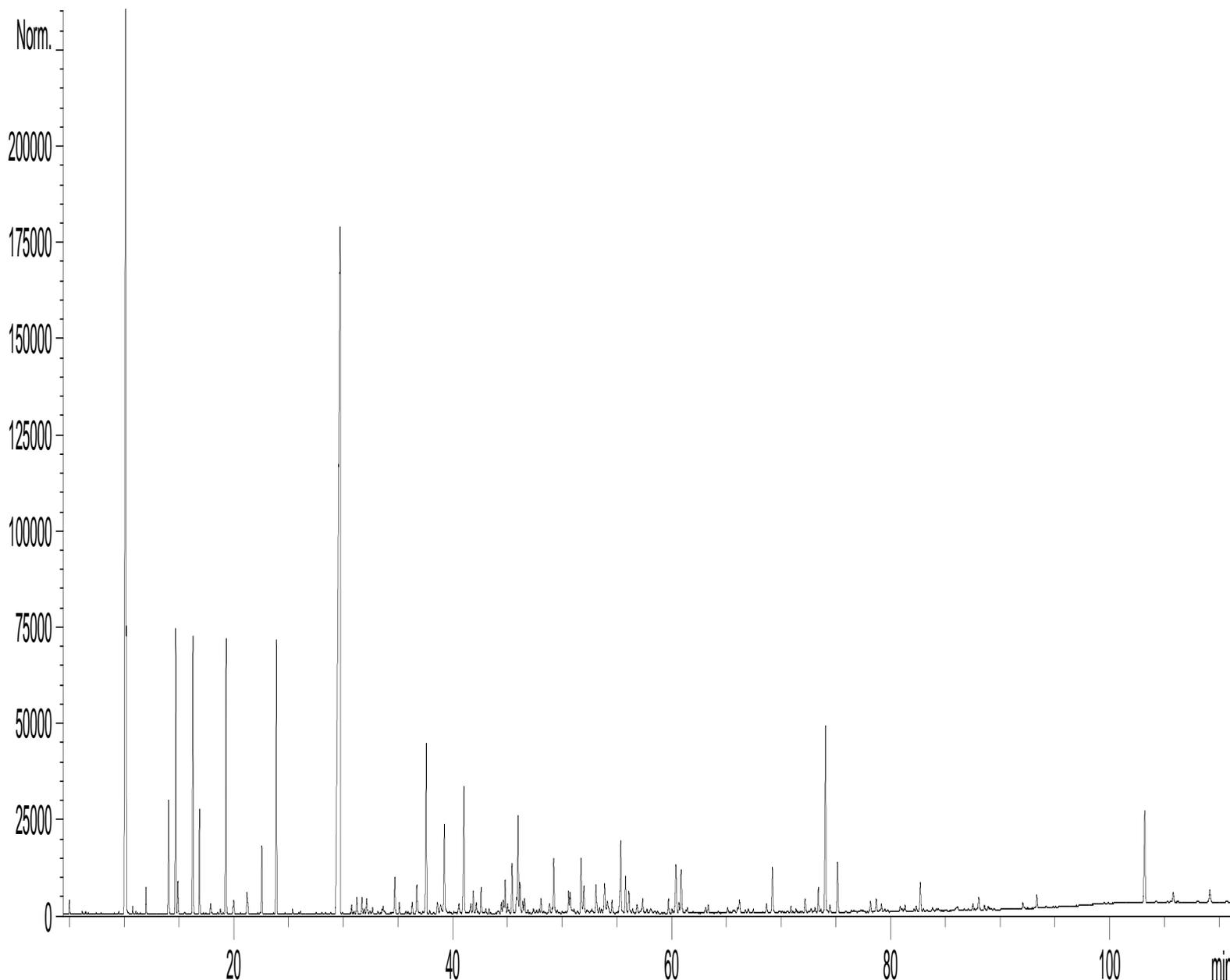
**GAS CHROMATOGRAPHY** norm NF ISO 11024

**Analysis conditions :**

CPG 6890 / MS 5973 – Column : VF WAX polar 60 m × 0,25 mm × 0,5 µm  
CPG 5890 FID - Column : : HP INNOWAX polar 60 m × 0,25 mm × 0,5 µm  
Temperature program : 6 mn to 60 °C -2 °C/mn→250 °C - 20mn to 250 °C  
Carrier gas He : 23 psis/MS – 30 psis/FID  
Sample injection / split : 1 µl of 10 % solution in hexane,  
Mass range : 30 to 350, Oil components are identified by a combination of retention times  
(our own database) and mass spectra library NKS 75 000 records,  
Percentages are calculated from GC/FID peaks areas without using corrections factors,

**Chromatographic profile (GC/FID)**

FID1 A, (PLANTHERIBCBOA297.D)



**Identification results 1 : FRANKINCENSE CARTERI ORGANIC BATCH F00100**

| Peak | RT (min) | Compound name              | %            | Norm (%) | Allergens (%) |
|------|----------|----------------------------|--------------|----------|---------------|
| 1    | 4,8      | OCTANE                     | 0,01         |          |               |
| 2    | 5,0      | ACETONE                    | 0,10         |          |               |
| 3    | 6,2      | NONANE                     | 0,03         |          |               |
| 4    | 6,5      | DIMETHYL HEPTADIENE ISOMER | 0,02         |          |               |
| 5    | 7,5      | METHYL VINYL KETONE        | 0,01         |          |               |
| 6    | 7,9      | FURAN ETHYL                | 0,01         |          |               |
| 7    | 9,1      | COMPOUND Mw=122            | 0,01         |          |               |
| 8    | 9,5      | TRICYCLENE                 | 0,02         |          |               |
| 9    | 10,1     | <b>α-PINENE</b>            | <b>20,02</b> |          |               |
| 10   | 10,2     | α-THUYENE                  | 1,33         |          |               |
| 11   | 10,8     | TOLUENE                    | 0,07         |          |               |
| 12   | 11,0     | BUTANE, 1-METHOXY-3-METHYL | 0,03         |          |               |
| 13   | 11,2     | DIMETHYL HEPTADIENE ISOMER | 0,01         |          |               |
| 14   | 11,5     | α-FENCHENE                 | 0,01         |          |               |
| 15   | 11,6     | 1-S-α-PINENE               | 0,01         |          |               |
| 16   | 12,0     | CAMPHENE                   | 0,29         |          |               |
| 17   | 14,1     | β-PINENE                   | 1,29         |          |               |
| 18   | 14,7     | <b>SABINENE</b>            | <b>3,12</b>  |          |               |
| 19   | 14,9     | PINADIENE                  | 0,35         |          |               |
| 20   | 15,2     | THUYADIENE                 | 0,02         |          |               |
| 21   | 15,5     | p-MENTH-2-ENE              | 0,03         |          |               |
| 22   | 16,2     | <b>OCTANE 1-METHOXY</b>    | <b>2,88</b>  |          |               |
| 23   | 16,3     | Δ3-CARENE                  | 0,50         |          |               |
| 24   | 16,9     | β-MYRCENE                  | 1,08         |          |               |
| 25   | 17,2     | α-PHELLANDRENE             | 0,02         |          |               |
| 26   | 17,5     | ψ-LIMONENE                 | 0,01         |          |               |
| 27   | 17,8     | σ-CYMENE                   | 0,13         |          |               |
| 28   | 18,0     | α-TERPINENE                | 0,02         |          |               |
| 29   | 18,5     | ALIPHATIC ETHER COMPOUND   | 0,02         |          |               |
| 30   | 18,8     | 1,8-CINEOLE, 2,3-DEHYDRO   | 0,06         |          |               |
| 31   | 19,0     | MENTHATRIENE ISOMER        | 0,02         |          |               |
| 32   | 19,3     | <b>LIMONENE</b>            | <b>3,33</b>  |          | 3,33          |
| 33   | 19,9     | β-PHELLANDRENE             | 0,07         |          |               |
| 34   | 20,0     | 1,8-CINEOLE                | 0,18         |          |               |
| 35   | 20,6     | ALIPHATIC METHOXY ALCOHOL  | 0,02         |          |               |
| 36   | 21,2     | ALIPHATIC ETHER COMPOUND   | 0,25         |          |               |
| 37   | 21,3     | Cis-β-OCIMENE              | 0,12         |          |               |
| 38   | 22,2     | γ-TERPINENE                | 0,01         |          |               |
| 39   | 22,6     | METHYL NONYL ETHER Mw=198  | 0,78         |          |               |
| 40   | 23,7     | m-CYMENE                   | 0,01         |          |               |
| 41   | 23,9     | <b>p-CYMENE</b>            | <b>3,40</b>  |          |               |
| 42   | 24,7     | TERPINOLENE                | 0,01         |          |               |
| 43   | 25,4     | STYRENE DIMETHYL ISOMER    | 0,06         |          |               |
| 44   | 26,1     | CYMENE ISOMERE             | 0,03         |          |               |
| 45   | 27,6     | PINOL                      | 0,03         |          |               |

**Identification results 2 : FRANKINCENSE CARTERI ORGANIC BATCH F00100**

| Peak | RT (min) | Compound name                            | %            | Norm (%) | Allergens (%) |
|------|----------|--|--------------|----------|---------------|
| 46   | 28,1     | 1-PROPYLPENTYL ACETATE                   | 0,02         |          | 0,05          |
| 47   | 28,4     | CYCLOPENTENONE TETRAMETHYL               | 0,02         |          |               |
| 48   | 28,9     | CYCLOPENTANE, 1-METHYL(METHYLPROPENYL)   | 0,03         |          |               |
| 49   | 29,7     | <b>DECANE 1-METHOXY</b>                  | <b>22,52</b> |          |               |
| 50   | 29,9     | CYCLOHEXENE 1-METHYL-4-METHYLETHYL       | 0,03         |          |               |
| 51   | 30,8     | 4-DECEN-1-OL, METHYL ETHER               | 0,12         |          |               |
| 52   | 30,8     | 1-OCTEN-3-YL ACETATE                     | 0,01         |          |               |
| 53   | 31,0     | TETRAMETHYL CYCLOPENTENOL Mw=140         | 0,03         |          |               |
| 54   | 31,2     | PINENE EPOXIDE                           | 0,24         |          |               |
| 55   | 31,7     | CYCLODECENE                              | 0,19         |          |               |
| 56   | 31,9     | 2-NONANONE                               | 0,08         |          |               |
| 57   | 32,1     | CYCLODECENE ISOMER                       | 0,18         |          |               |
| 58   | 32,2     | 1-METHOXY-3-HYDROXYETHYL NONANE          | 0,06         |          |               |
| 59   | 32,4     | HEPTADIENAL DIMETHYL ISOMER              | 0,04         |          |               |
| 60   | 32,6     | METHYLENECYCLOHEXANE COMPOUND            | 0,02         |          |               |
| 61   | 32,7     | ETHANONE FURANYL                         | 0,08         |          |               |
| 62   | 33,2     | HEXYL BUTYRATE                           | 0,05         |          |               |
| 63   | 33,5     | TERPENIC EPOXIDE                         | 0,06         |          |               |
| 64   | 33,6     | PERILLENE                                | 0,09         |          |               |
| 65   | 34,5     | CYCLOPENTENE ACETALDEHYDE TRIMETHYL ISO, | 0,03         |          |               |
| 66   | 34,7     | Trans-2-DECEN-1-OL, METHYL ETHER         | 0,51         |          |               |
| 67   | 35,1     | $\alpha$ ,p-DIMETHYLSTYRENE              | 0,15         |          |               |
| 68   | 35,7     | $\beta$ -THUYONE                         | 0,05         |          |               |
| 69   | 35,9     | LIMONENE cis-OXIDE                       | 0,03         |          |               |
| 70   | 36,3     | METHYL UNDECYL ETHER                     | 0,16         |          |               |
| 71   | 36,7     | $\alpha$ -CUBEBENE                       | 0,53         |          |               |
| 72   | 37,3     | EPOXY-4,8-TERPINOLENE                    | 0,04         |          |               |
| 73   | 37,6     | <b>OCTYL ACETATE</b>                     | <b>2,41</b>  |          |               |
| 74   | 37,9     | KETONE COMPOUND                          | 0,05         |          |               |
| 75   | 38,6     | CYCLOSATIVENE + YLANGENE                 | 0,21         |          |               |
| 76   | 39,0     | SESQUITERPENE                            | 0,24         |          |               |
| 77   | 39,2     | $\alpha$ -COPAENE                        | 1,42         |          |               |
| 78   | 39,8     | SESQUITERPENE                            | 0,04         |          |               |
| 79   | 40,1     | 2-NONANOL                                | 0,04         |          |               |
| 80   | 40,6     | $\alpha$ -BOURBONENE                     | 0,21         |          |               |
| 81   | 41,0     | $\beta$ -BOURBONENE                      | 2,05         |          |               |
| 82   | 41,7     | $\alpha$ -GURJUNENE                      | 0,23         |          |               |
| 83   | 41,9     | LINALOOL                                 | 0,31         |          | 0,31          |
| 84   | 42,2     | $\beta$ 1-CUBEBENE                       | 0,18         |          |               |
| 85   | 42,3     | SESQUITERPENE                            | 0,04         |          |               |
| 86   | 42,6     | 1-OCTANOL                                | 0,36         |          |               |
| 87   | 43,0     | CYCLODODECANE                            | 0,09         |          |               |
| 88   | 43,3     | trans-p-MENTH-2-EN-1-OL                  | 0,07         |          |               |
| 89   | 44,2     | PINOCARVONE                              | 0,09         |          |               |
| 90   | 44,4     | SESQUITERPENE                            | 0,16         |          |               |

**Identification results 3 : FRANKINCENSE CARTERI ORGANIC BATCH F00100**

| Peak | RT (min) | Compound name                      | %    | Norm (%) | Allergens (%) |
|------|----------|------------------------------------|------|----------|---------------|
| 91   | 44,6     | ε-CADINENE                         | 0,23 |          |               |
| 92   | 44,8     | BORNYL ACETATE                     | 0,50 |          |               |
| 93   | 45,0     | α,trans-BERGAMOTENE                | 0,15 |          |               |
| 94   | 45,1     | NOPINONE                           | 0,06 |          |               |
| 95   | 45,4     | β-ELEMENE                          | 0,46 |          |               |
| 96   | 45,8     | β-CUBEBENE                         | 0,27 |          |               |
| 97   | 46,0     | TERPINENE-4-OL                     | 1,27 |          |               |
| 98   | 46,2     | β-CARYOPHYLLENE                    | 0,50 |          |               |
| 99   | 46,4     | HEXYL HEXANOATE                    | 0,18 |          |               |
| 100  | 46,6     | 6,9-GUAIADIENE                     | 0,24 |          |               |
| 101  | 46,9     | OCTYL BUTYRATE                     | 0,06 |          |               |
| 102  | 47,0     | SESQUITERPENE                      | 0,02 |          |               |
| 103  | 47,4     | Cis-p-MENTH-2-EN-1-OL              | 0,09 |          |               |
| 104  | 47,7     | SESQUITERPENE                      | 0,07 |          |               |
| 105  | 47,9     | α-THUYENAL                         | 0,08 |          |               |
| 106  | 48,1     | MYRTENAL                           | 0,23 |          |               |
| 107  | 48,3     | SABINACETONE                       | 0,07 |          |               |
| 108  | 48,8     | SESQUITERPENE                      | 0,20 |          |               |
| 109  | 49,1     | TERPENIC DIEPOXIDE                 | 0,08 |          |               |
| 110  | 49,2     | ALLO-AROMADENDRENE                 | 0,30 |          |               |
| 111  | 49,3     | Trans-PINOCARVEOL                  | 0,56 |          |               |
| 112  | 49,5     | Trans-p-MENTHA-1,5-DIEN-8-OL       | 0,06 |          |               |
| 113  | 49,8     | E-β-FARNESENE                      | 0,02 |          |               |
| 114  | 50,0     | ZONARENE                           | 0,05 |          |               |
| 115  | 50,3     | SESQUITERPENE                      | 0,05 |          |               |
| 116  | 50,6     | Trans-VERBENOL                     | 0,33 |          |               |
| 117  | 50,7     | α-HUMULENE                         | 0,35 |          |               |
| 118  | 50,9     | δ-SELINENE + DECYL ACETATE         | 0,08 |          |               |
| 119  | 51,1     | NERAL                              | 0,08 |          |               |
| 120  | 51,4     | MYRTENYL ACETATE                   | 0,06 |          |               |
| 121  | 51,7     | γ-MUUROLENE                        | 0,50 |          |               |
| 122  | 51,8     | α-TERPINEOL                        | 0,36 |          |               |
| 123  | 52,0     | 9-DECEN-1-OL, METHYL ETHER         | 0,44 |          |               |
| 124  | 52,3     | BORNEOL                            | 0,08 |          |               |
| 125  | 52,4     | LEDENE                             | 0,04 |          |               |
| 126  | 52,7     | TERPENIC KETONE                    | 0,14 |          |               |
| 127  | 53,0     | VERBENONE                          | 0,41 |          |               |
| 128  | 53,1     | GERMACRENE D                       | 0,13 |          |               |
| 129  | 53,4     | DIHYDROXY-p-MENTHENE ISOMER Mw=170 | 0,10 |          |               |
| 130  | 53,6     | SESQUITERPENE                      | 0,08 |          |               |
| 131  | 53,9     | α-MUUROLENE + β-SELINENE           | 0,58 |          |               |
| 132  | 54,1     | α-SELINENE                         | 0,24 |          |               |
| 133  | 54,2     | PIPERITONE                         | 0,11 |          |               |
| 134  | 54,6     | CARVONE                            | 0,18 |          |               |
| 135  | 54,7     | Trans-PIPERITOL                    | 0,04 |          |               |

**Identification results 4 : FRANKINCENSE CARTERI ORGANIC BATCH F00100**

| Peak | RT (min) | Compound name                  | %           | Norm (%) | Allergens (%) |
|------|----------|--------------------------------|-------------|----------|---------------|
| 136  | 55,3     | GERANYL ACETATE                | 0,34        |          |               |
| 137  | 55,4     | 1-DECANOL                      | 0,96        |          |               |
| 138  | 55,8     | δ-CADINENE                     | 0,59        |          |               |
| 139  | 56,1     | γ-CADINENE                     | 0,41        |          |               |
| 140  | 56,4     | HYDROXY ALIPHATIC ETHER        | 0,07        |          |               |
| 141  | 56,8     | SESQUITERPENIC COMPOUND Mw=222 | 0,18        |          |               |
| 142  | 57,1     | p-METHYLACETOPHENONE           | 0,05        |          |               |
| 143  | 57,2     | CUMINAL                        | 0,08        |          |               |
| 144  | 57,4     | MYRTENOL                       | 0,19        |          |               |
| 145  | 57,5     | NEROL                          | 0,02        |          |               |
| 146  | 57,7     | SESQUITERPENIC COMPOUND Mw=222 | 0,07        |          |               |
| 147  | 58,1     | MYRTENOL ISOMER                | 0,15        |          |               |
| 148  | 58,4     | BENZENE HEXAMETHYL Mw=162      | 0,03        |          |               |
| 149  | 58,6     | BENZYL COMPOUND                | 0,04        |          |               |
| 150  | 58,7     | Trans-2-DODECEN-1-OL           | 0,04        |          |               |
| 151  | 59,3     | DECYL ISOBUTYRATE              | 0,02        |          |               |
| 152  | 59,7     | Trans-CARVEOL                  | 0,20        |          |               |
| 153  | 60,1     | GERANIOL                       | 0,04        |          | 0,04          |
| 154  | 60,4     | CALAMENENE                     | 0,84        |          |               |
| 155  | 60,7     | p-CYMENE-8-OL                  | 0,09        |          |               |
| 156  | 60,9     | AGAROFURAN ISOMER              | 0,58        |          |               |
| 157  | 61,0     | TOLUENE 2,6-DIMETHOXY          | 0,10        |          |               |
| 158  | 61,3     | SESQUITERPENIC COMPOUND Mw=220 | 0,02        |          |               |
| 159  | 61,4     | Cis-CARVEOL                    | 0,05        |          |               |
| 160  | 61,9     | ETHOXY ALIPHATIC COMPOUND      | 0,02        |          |               |
| 161  | 63,1     | SESQUITERPENIC EPOXIDE         | 0,10        |          |               |
| 162  | 63,3     | Epi-CUBEBOL                    | 0,12        |          |               |
| 163  | 65,1     | α-CALACORENE                   | 0,07        |          |               |
| 164  | 66,0     | PALUSTROL                      | 0,09        |          |               |
| 165  | 66,2     | CUBEBOL                        | 0,25        |          |               |
| 166  | 66,7     | SESQUITERPENOL                 | 0,04        |          |               |
| 167  | 67,0     | SESQUITERPENIC EPOXIDE         | 0,07        |          |               |
| 168  | 67,4     | 1-UNDECANOL                    | 0,05        |          |               |
| 169  | 68,7     | ISOCARYOPHYLLENE EPOXIDE       | 0,15        |          |               |
| 170  | 69,2     | CARYOPHYLLENE EPOXIDE          | 0,74        |          |               |
| 171  | 70,9     | NEROLIDOL                      | 0,08        |          |               |
| 172  | 71,4     | HUMULOL                        | 0,05        |          |               |
| 173  | 71,9     | SESQUITERPENOL                 | 0,02        |          |               |
| 174  | 72,2     | EPOXY-6,7-HUMULENE             | 0,23        |          |               |
| 175  | 72,5     | GLEENOL                        | 0,01        |          |               |
| 176  | 72,7     | Épi-CUBENOL                    | 0,07        |          |               |
| 177  | 73,1     | CUBENOL                        | 0,07        |          |               |
| 178  | 73,4     | ELEMOL                         | 0,32        |          |               |
| 179  | 73,6     | GLOBULOL                       | 0,04        |          |               |
| 180  | 74,1     | <b>VIRIDIFLOROL</b>            | <b>2,82</b> |          |               |

**Identification results 5 : FRANKINCENSE CARTERI ORGANIC BATCH F00100**

| Peak | RT (min) | Compound name                     | %            | Norm (%) | Allergens (%) |
|------|----------|-----------------------------------|--------------|----------|---------------|
| 181  | 74,2     | CUMINOL                           | 0,04         |          |               |
| 182  | 74,5     | 10-UNDECEN-1-OL                   | 0,10         |          |               |
| 183  | 75,2     | SESQUITERPENOL                    | 0,72         |          |               |
| 184  | 76,6     | SESQUITERPENOL                    | 0,02         |          |               |
| 185  | 78,2     | T-CADINOL                         | 0,17         |          |               |
| 186  | 78,7     | DEHYDROVIRIDIFLOROL               | 0,20         |          |               |
| 187  | 79,0     | $\alpha$ -MUUROL                  | 0,01         |          |               |
| 188  | 79,2     | $\delta$ -CADINOL                 | 0,09         |          |               |
| 189  | 79,5     | CARVACROL                         | 0,05         |          |               |
| 190  | 79,7     | GERANYLGERANIADIENE ISOMER Mw=272 | 0,04         |          |               |
| 191  | 80,9     | $\alpha$ -EUDESMOL                | 0,05         |          |               |
| 192  | 81,2     | $\alpha$ -CADINOL                 | 0,01         |          |               |
| 193  | 81,3     | $\beta$ -EUDESMOL                 | 0,07         |          |               |
| 194  | 82,3     | SESQUITERPENIC DIOL Mw=236        | 0,07         |          |               |
| 195  | 82,7     | CEMBRENE Mw=272                   | 0,48         |          |               |
| 196  | 83,0     | CAPRIC ACID                       | 0,03         |          |               |
| 197  | 83,8     | KETONE OXIDE COMPOUND Mw=168      | 0,06         |          |               |
| 198  | 87,5     | QUINOLINIC COMPOUND               | 0,09         |          |               |
| 199  | 88,1     | VERTICILLA-4,7-11-TRIENE Mw=272   | 0,26         |          |               |
| 200  | 88,6     | COUMARIN COMPOUND Mw=206          | 0,07         |          |               |
| 201  | 88,9     | SESQUITERPENOL Mw=220             | 0,04         |          |               |
| 202  | 92,1     | LAURIC ACID                       | 0,11         |          |               |
| 203  | 93,3     | SESQUITERPENIC DIOL               | 0,20         |          |               |
| 204  | 103,2    | INCENSYL ACETATE                  | 1,57         |          |               |
| 205  | 105,8    | CEMBRENOL                         | 0,16         |          |               |
| 206  | 109,1    | INCENSOLE                         | 0,26         |          |               |
| 207  | 110,7    | ISOLONGIFOLENONE Mw=218           | 0,03         |          |               |
|      |          | <b>TOTAL</b>                      | <b>99,10</b> |          | <b>3,73</b>   |