Date : May 10, 2023

Certificate of Analysis – GC Profiling

Sample identification

Internal code : 23E04-PTH01
Customer identification : Peru Balsam Oil - Raw material COO El Salvador | Distilled in France - PN0109R
Type : Resin
Source : *Myroxylon balsamum*
Customer : Plant Therapy

Analysis

Method: PC-MAT-014 ISO - Analysis of the composition of an essential oil or other volatile liquid by FAST GC-FID (in French); identifications validated by GC-MS.
Analyst : Sylvain Mercier, M. Sc., Chimiste 2014-005
Analysis date : May 09, 2023

Checked and approved by :

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

Notes: This report may not be published, including online, without the written consent from Laboratoire PhytoChemia. This report is digitally signed, it is only considered valid if the digital signature is intact. The results only describe the samples that were submitted to the assays.

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PHYSICOCHEMICAL DATA

Physical aspect: Yellow viscous liquid
Refractive index: 1.5744 ± 0.0003 (20 °C; method PC-MAT-016)

CONCLUSION

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

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Analysis summary – Consolidated contents

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

Identification	%	Class
Toluene	0.01	Simple phenolic
Styrene	0.01	Simple phenolic
Benzaldehyde	0.03	Simple phenolic
Benzyl alcohol	0.76	Simple phenolic
Acetophenone	0.01	Simple phenolic
Benzyl formate	0.01	Phenolic ester
ortho-Guaiacol	0.02	Simple phenolic
Methyl benzoate	0.01	Phenolic ester
Benzoic acid	5.39	Simple phenolic
4-Ethylguaiacol	0.01	Norphenylpropanoid
4-Vinylguaiacol	0.17	Simple phenolic
Unknown	0.03	Unknown
Eugenol	0.01	Phenylpropanoid
Methyl (*E*)-cinnamate	0.10	Phenylpropanoid ester
Vanillin	0.69	Simple phenolic
(*E*)-β-Farnesene	0.12	Sesquiterpene
Geranylacetone	0.01	Monoterpenic ketone
(*E*)-Cinnamic acid	3.89	Phenylpropanoid
(*E*)-Isoeugenol	0.06	Phenylpropanoid
Ethyl (*E*)-cinnamate	0.03	Phenylpropanoid ester
Unknown	0.03	Unknown
Unknown	0.01	Unknown
β-Bisabolene	0.04	Sesquiterpene
(3*E*,6*E*)-α-Farnesene	0.06	Sesquiterpene
Guaiacylacetone	0.37	Phenylpropanoid
(*E*)-α-Bisabolene	0.03	Sesquiterpene
Unknown	0.07	Unknown
(*E*)-Nerolidol	3.34	Sesquiterpenic alcohol
Unknown	0.07	Unknown
Butyrovanillone?	0.02	Phenylbutanoid
Methoxyeugenol	0.02	Phenylpropanoid
Unknown	0.06	Unknown
τ-Cadinol	0.01	Sesquiterpenic alcohol
α-Cadinol	0.01	Sesquiterpenic alcohol
(2*E*,6*Z*)-Farnesol	0.01	Sesquiterpenic alcohol
(*E*)-Stilbene?	0.01	Stilbene
Unknown	0.04	Unknown
(*E*)-Coniferaldehyde	0.03	Phenylpropanoid
Benzyl benzoate	54.80	Phenolic ester
Benzyl para-toluate	0.01	Phenolic ester
Benzyl hydrocinnamate	0.41	Phenylpropanoid ester
Unknown	0.01	Unknown
Benzyl (*Z*)-cinnamate	0.93	Phenylpropanoid ester
Geranyl benzoate	0.01	Phenolic ester
Benzyl (*E*)-cinnamate	26.33	Phenylpropanoid ester

Benzyl (*E*)-ferulate	0.12	Phenylpropanoid ester
Consolidated total	**98.21%**	

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.

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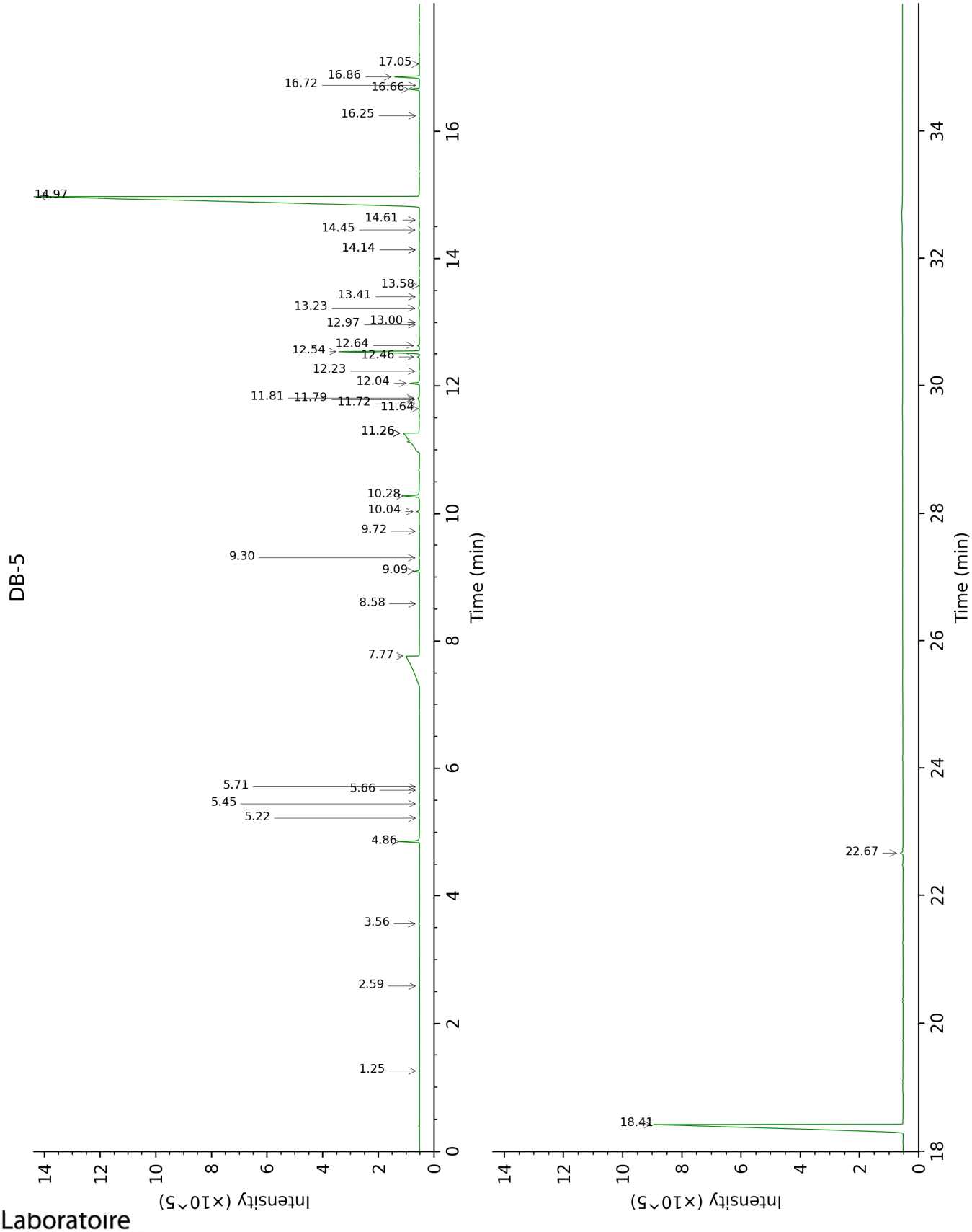
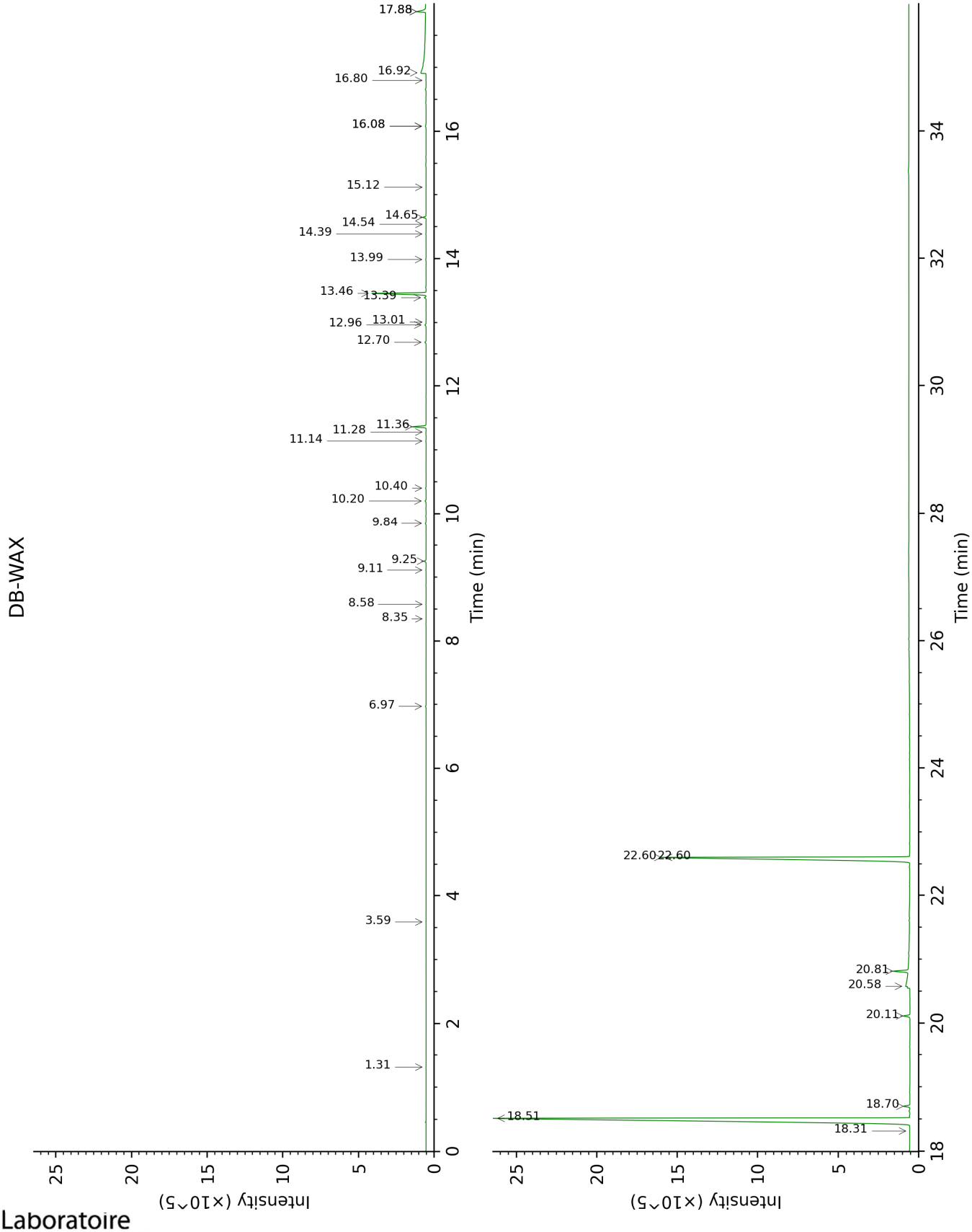

DB-5
17.05
16.86
16.72
16.66
16.25
14.97
14.61
14.45
14.14
13.58
13.41
13.23
13.00
12.97
12.64
12.54
12.46
12.23
12.04
11.81
11.79
11.72
11.64
11.26
10.28
10.04
9.72
9.30
9.09
8.58
7.77
5.71
5.66
5.45
5.22
4.86
3.56
2.59
1.25
22.67
18.41
Time (min)
Intensity (×10^5)


DB-WAX
17.88
16.92
16.80
16.08
15.12
14.65
14.54
14.39
13.99
13.46
13.39
13.01
12.96
12.70
11.36
11.28
11.14
10.40
10.20
9.84
9.25
9.11
8.58
8.35
6.97
3.59
1.31
Intensity (×10^5)
Time (min)
22.60
22.60
20.81
20.58
20.11
18.70
18.51
18.31
Intensity (×10^5)
Time (min)

FULL ANALYSIS DATA

Identification	Column DB-5			Column DB-WAX		
	R.T	R.I	%	R.T	R.I	%
Toluene	1.25	761	0.01	1.31	1003	0.01
Styrene	2.59	887	0.01	3.59	1210	0.01
Benzaldehyde	3.56	954	0.03	6.97	1456	0.03
Benzyl alcohol	4.86	1038	0.76	11.36	1813	0.80
Acetophenone	5.22	1061	0.01	8.58	1580	0.01
Benzyl formate	5.45	1075	0.01	9.11	1623	0.02
ortho-Guaiacol	5.66	1088	0.02	11.14	1793	0.02
Methyl benzoate	5.71	1091	0.01	8.35	1562	tr
Benzoic acid	7.77	1222	5.39	16.92	2360	3.98
4-Ethylguaiacol	8.58	1277	0.01	13.01	1963	0.01
4-Vinylguaiacol	9.09	1311	0.17	14.65	2121	0.19
Unknown [m/z 105, 77 (59), 122 (29), 51 (18), 106 (8), 50 (8)...]	9.30	1326	0.03			
Eugenol	9.72	1355	0.01	14.39	2095	0.02
Methyl (*E*)-cinnamate	10.04	1378	0.10	13.39	1999	0.11
Vanillin	10.28	1395	0.69	17.88*	2466	0.80
(*E*)-β-Farnesene	11.26*	1467	4.76	9.25	1634	0.12
Geranylacetone	11.26*	1467	[4.76]	11.28	1805	0.01
(*E*)-Cinnamic acid	11.26*	1467	[4.76]	20.58†	2791	4.82
(*E*)-Isoeugenol	11.26*	1467	[4.76]	16.08*	2269	0.06
Ethyl (*E*)-cinnamate	11.26*	1467	[4.76]	13.99	2056	0.03
Unknown [m/z 151, 166 (47), 77 (35), 147 (35), 105 (25), 148 (24)...]	11.64	1496	0.03			
Unknown [m/z 93, 105 (98), 147 (85), 77 (75), 148 (58), 122 (55)...]	11.72	1501	0.01			
β-Bisabolene	11.79	1506	0.04	9.84	1683	0.05
(3*E*,6*E*)-α-Farnesene	11.81	1508	0.06	10.20	1713	0.06
Guaiacylacetone	12.04	1526	0.37	18.70	2561	0.37
(*E*)-α-Bisabolene	12.23	1541	0.03	10.40	1730	0.04
Unknown [m/z 109, 69 (74), 43 (55), 41 (30), 93 (28), 55 (23)...]	12.46	1559	0.07	12.70	1933	0.07
(*E*)-Nerolidol	12.54	1565	3.34	13.46	2005	3.43
Unknown [m/z 109, 69 (75), 43 (55), 41 (29), 93	12.64	1574	0.07	12.96	1959	0.08

(28), 55 (26), 71 (22)...]						
Butyrovanillone?	12.97	1599	0.02			
Methoxyeugenol	13.00	1602	0.02	17.88*	2466	[0.80]
Unknown [m/z 131, 103 (51), 77 (32), 148 (23), 51 (12)...]	13.23	1620	0.06			
τ-Cadinol	13.41	1635	0.01	14.54	2110	0.01
α-Cadinol	13.58	1649	0.01	15.12	2169	0.01
(2*E*,6*Z*)-Farnesol	14.14*	1695	0.02	16.08*	2269	[0.06]
(*E*)-Stilbene?	14.14*	1695	[0.02]	16.80	2346	0.01
Unknown [m/z 194, 115 (73), 193 (59), 179 (42), 116 (41), 91 (38)...]	14.45	1722	0.04			
(*E*)-Coniferaldehyde	14.61	1735	0.03	22.60*	3058	26.72
Benzyl benzoate	14.97	1767	54.80	18.51	2539	56.06
Benzyl para-toluate	16.25	1881	0.01			
Benzyl hydrocinnamate	16.66	1919	0.41	20.11	2732	0.42
Unknown [m/z 91, 107 (51), 180 (40), 105 (32), 77 (29), 57 (26)...]	16.72	1925	0.01			
Benzyl (*Z*)-cinnamate	16.86	1937	0.93	20.81†	2821	[4.82]
Geranyl benzoate	17.06	1956	0.01	18.31	2516	0.01
Benzyl (*E*)-cinnamate	18.41	2089	26.33	22.60*	3058	[26.72]
Benzyl (*E*)-ferulate	22.67	2559	0.12			
Total identified		**98.54%**			**98.22%**	
Total reported		**98.87%**			**98.37%**	

*: 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