



Gas Chromatography Analysis

Dear Customer,

Attached you will find the results of gas chromatographic analysis based on the information provided by our Producer/Laboratory for:

Sample Reference **1530**

We testify that the Chromatographic Analysis (GC) for the mentioned sample is identical with:

Product No.:	1530
Product Name:	Golden Rod organic
Botanical Name:	Solidago canadensis
Batch No.:	1018592

Bühl, 2019-08-30

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Dr. David Nayan

Identification	Column: BP5		
	R.T.	R.I.	%
cis-Hex-3-en-1-ol	2.48	864	0.04
Hexanol	2.72	882	0.02
Tricyclene	3.22	915	0.03
α -Thujene	3.31	920	0.17
α -Pinene	3.44	928	15.40
Camphene	3.70	943	0.76
Thuja-2,4(10)-diene	3.79	949	0.02
Sabinene	4.15	969	5.69
β -Pinene	4.20	973	2.33
Myrcene	4.50	990	10.11
α -Phellandrene	4.75	1004	0.56
α -Terpinene	4.94	1015	0.31
Limonene	5.20*	1029	12.47
1,8-Cineole	5.20*	1029	[12.47]
para-Cymene	5.20*	1029	[12.47]
cis- β -Ocimene	5.35	1037	0.02
trans- β -Ocimene	5.53	1047	0.31
γ -Terpinene	5.72	1057	0.50
cis-Sabinene hydrate	6.05	1075	0.03
Terpinolene	6.20	1083	0.84
para-Cymenene	6.41	1095	0.02
Linalool	6.68	1106	0.12
Nonanal	6.78	1109	0.03
(E)-4,8-Dimethylnona-1,3,7-triene	6.82	1111	0.17
Camphor	7.76	1145	0.05
Borneol	8.63	1176	0.21
Terpinen-4-ol	8.80	1182	0.64
α -Terpineol	9.46	1203	0.06
Bornyl acetate	12.94	1280	2.86
Bicycloelemene	15.08	1318	0.03
δ -Elemene	15.33	1321	1.06
α -Cubebene	15.98	1331	0.17
α -Ylangene	17.14	1349	0.03
α -Copaene	17.70	1357	0.24
β -Bourbonene	18.13	1364	0.28
β -Cubebene	18.69	1372	0.31
β -Elemene	18.96	1376	1.14
α -Gurjunene	19.68	1387	0.26

(89), 41 (78), 55 (74), 82 (73), 43 (69)... 278 (2)	
Total Identified	97.14%

β -Ylangene	20.16	1394	0.49
β -Caryophyllene	20.64*	1401	1.61
Unknown (m/z = 161, 120 (99), 91 (79), 105 (68), 93 (62), 77 (56), 79 (51)... 204 (15))	20.64*	1401	[1.61]
β -Copaene	21.53	1411	0.26
γ -Elemene	21.88	1416	0.06
trans- α -Bergamotene	22.17	1419	0.19
cis- β -Farnesene	22.58	1424	0.07
cis-Muurolo-3,5-diene	23.05	1429	0.25
α -Humulene	23.42	1434	0.56
9-epi- β -Caryophyllene	24.09	1442	0.11
Germacrene D	26.03*	1465	28.07
α -Amorphene	26.03*	1465	[28.07]
β -Selinene	26.36	1469	0.28
α -Selinene	26.95*	1476	1.35
Bicyclogermacrene	26.95*	1476	[1.35]
Epizonarene	27.37	1481	0.04
Germacrene A	27.50	1483	0.10
α -Muurolole	27.73	1485	0.51
δ -Amorphene	27.86	1487	1.25
γ -Cadinene	28.75	1497	0.81
δ -Cadinene	29.44	1507	2.11
Zonarene	29.54	1508	0.08
trans-Cadina-1,4-diene	30.23	1518	0.09
β -Sesquiphellandrene	30.52	1522	0.15
Germacrene B	32.07	1544	0.70
(E)-Nerolidol	33.86*	1569	0.13
Spathulenol	33.86*	1569	[0.13]
Unknown (m/z = 91, 93 (90), 132 (79), 119 (76), 105 (63), 77 (61), 92 (41)... 220 (1))	36.07	1602	0.13
1-epi-Cubenol	36.64	1616	0.05
Unknown (m/z = 179, 161 (66), 119 (49), 95 (41), 109 (40)...280)	37.01	1625	0.21
τ -Cadinol	37.54	1638	0.08
τ -Muurolol	37.65	1641	0.13
α -Muurolol	37.78	1644	0.06
α -Cadinol	38.10	1652	0.19
Cyclocolorenone	41.29	1739	0.07
Unknown (m/z = 68, 95	44.13	1833	0.07