

Supplemental Table S1. Constituents and concentrations of *Helichrysum arenarium* from Bulgaria. The min-max range represents the *H. arenarium* essential oil constituents from the three locations in Bulgaria.

№	Compounds	RI	min-max
1	Tricyclene	920	0.096-0.157
2	α -Thujene	924	0.048-0.300
3	α -Pinene	932	32.713-45.655
4	Camphene	946	0.252-1.373
5	Thuja-2,4(10)-diene	953	0.263-1.118
6	Sabinene	969	10.044-11.357
7	β -Pinene	974	2.247-3.019
8	α -Phellandrene	1002	0.272-0.324
9	α -Terpinene	1015	0.193-0.523
10	p-Cymene	1020	0.271-0.425
11	D-Limonene	1023	1.942-2.356
12	γ -Terpinene	1055	0.165-1.008
13	(2E)-Octen-1-ol	1062	0.330-0.549
14	Terpinolene	1085	0.259-0.561
15	6-Camphenone	1094	0.066-0.409
16	α -Pinene oxide	1098	0.233-0.367
17	n-Unecane	1100	0.188-0.324
18	Thujone	1102	0.413-0.468
19	6-Camphenol	1111	0.363-1.605
20	α -Campholenal	1123	0.325-0.979
21	cis-Verbenol	1136	0.881-1.014

22	trans-Verbenol	1140	2.868-3.454
23	Pinocarvone	1160	0.169-0.200
24	Mentha-1,5-dien-8-ol	1167	0.355-0.609
25	1-Terpinen-4-ol	1178	0.862-2.059
26	p-Cymen-8-ol	1180	0.135-0.207
27	2-Pinen-10-ol	1194	0.640-0.772
28	Verbenone	1205	0.407-0.685
29	trans-Carveol	1216	0.263-0.344
30	Carvone	1239	0.160-0.241
31	Bornyl acetate	1255	0.786-1.347
32	α -Longipinene	1348	0.121-0.216
33	α -Copaene	1374	0.074-0.124
34	β -Elemene	1389	0.151-0.192
35	n-Tetradecane	1400	2.077-2.574
36	Methyleugenol	1405	0.065-0.284
37	β -Caryophyllene	1418	0.540-0.684
38	Carvone hydrate	1423	0.086-0.111
39	β -Copaene	1429	0.00-0.354
40	β -Gurjunene	1432	3.256-3.980
41	α -Humulene	1451	0.213-0.335
42	Germacrene D	1484	3.294-5.546
43	n-Pentadecane	1500	0.369-0.431
44	Germacrene D-4-ol	1572	0.200-0.291
45	(-)-Spathulenol	1577	0.249-0.717

46	Caryophyllene oxide	1582	0.345-0.589
47	γ -Eudesmol	1630	0.146-0.376
48	tau.-Cadinol	1638	0.665-0.923
49	α -Muurolol	1646	0.828-1.735
50	β -Eudesmol	1650	0.418-0.857
51	neo-Intermedeol	1657	0.279-0.342
52	Intermedeol	1665	0.663-1.075
53	Germacra-4(15),5,10(14)-trien-1 α -ol	1686	1.063-1.450
54	n-Heptadecane	1700	0.317-0.449
55	Curcumenol	1732	0.152-0.209
56	Aristolone	1761	0.735-1.205
57	14-hydroxy- α -Muurolene	1778	0.49-0.763
58	n-Octadecane	1800	0.088-0.412
59	Hexahydrofarnesyl acetone	1833	0.175-0.520
60	n-Nonadecane	1900	0.115-0.159
61	Manoyl oxide	1994	0.099-0.365
62	n-Eicosane	2000	0.292-0.925
63	n-Heneicosane	2100	0.205-0.377
64	Laurenan-2-one	2113	0.101-0.313
65	Methyl octadecanoate	2124	0.190-0.291
66	Linoleic acid	2133	0.00-0.202
67	Oleic acid	2142	0.00-0.134
68	Grandiflorene	2175	0.00-0.119
69	n-Docosane	2200	0.109-0.715

70	Phyllocladanol	2209	0.404-2.356
71	(E)-Phytol acetate	2218	0.874-1.332
72	Sclareol	2225	0.564-0.708
73	7 α -hydroxy-Manool	2237	0.155-0.229
74	3 α -hydroxy-Manool	2293	0.240-0.946
75	n-Tricosane	2300	0.365-0.574

Supplemental Table S2. Constituents and concentrations of *Helichrysum italicum* introduced from France, Corsica and Bosnia. The min-max range includes variation in concentrations of the essential oil constituents from all three locations; France, Corsica, and Bosnia.

№	Compounds	RI	min-max of the three origins
1	4-methyl-2-Pentanol	745	0.00-0.513
2	2-Methyloctane	861	0.00-0.803
3	n-Nonane	900	0.089-0.237
4	α -Pinene	932	2.541-14.268
5	Camphene	946	0.736-1.019
6	Sabinene	969	0.087-0.322
7	β -Pinene	974	0.703-2.117
8	α -Phellandrene	1002	0.165-0.223
9	α -Terpinene	1015	0.133-0.411
10	p-Cymene	1020	0.247-0.762
11	D-Limonene	1023	3.118-5.483
12	Eucalyptol	1025	0.317-0.989
13	β -trans-Ocimene	1040	0.185-0.558
14	Isobutyl angelate	1044	0.239-0.552
15	γ -Terpinene	1055	0.316-0.924
16	Terpinolene	1085	0.194-0.373
17	2-Nonanone	1089	0.120-0.767
18	β -Linalool	1096	0.098-0.923
19	2-Methyl butyl-2-methyl butyrate	1123	0.081-4.357
20	Isoamyl angelate	1143	0.094-0.199

21	Isoamyl tiglate	1149	0.777-2.057
22	1-Terpinen-4-ol	1178	0.272-1.776
23	(2Z)-Octenol acetate	1197	0.153-0.750
24	n-Decanal	1203	0.080-0.654
25	Nerol	1226	0.178-2.661
26	tetrahydro-Linalyl acetate	1232	0.062-0.608
27	3-Methyl pentyl angelate	1249	0.097-0.494
28	2-Undecanone	1291	0.079-0.413
29	n-Tridecane	1300	0.089-0.738
30	Neryl acetate	1359	3.486-15.105
31	(2E)-Undecenol	1266	0.110-0.991
32	α -Copaene	1373	1.598-2.534
33	n-Tetradecane	1400	0.055-0.152
34	Italicene	1406	2.739-4.738
35	α -cis-Bergamotene	1411	0.354-1.272
36	β -Caryophyllene	1417	0.377-3.888
37	p-Cymen-7-ol acetate	1421	2.343-5.602
38	Linalool butanoate	1423	0.226-0.391
39	β -Copaene	1429	0.153-1.219
40	α -Guaiene	1436	1.603-4.154
41	(Z)- β -Farnesene	1439	0.451-0.626
42	(2Z,6E)-Dodecadien-1-al	1444	0.155-1.137
43	α -Himachalene	1450	0.328-0.686
44	n-Dodecanol	1470	0.561-0.797
45	Undecanal, dimethyl acetal	1475	0.550-0.851
46	γ -Curcumene	1481	0.612-2.613
47	β -Himachalene	1500	9.744-11.705
48	β -Curcumene	1513	1.359-2.611
49	δ -Cadinene	1522	0.557-5.631
50	α -Cadinene	1537	0.403-3.554
51	α -Calacorene	1544	0.561-1.732
52	cis-Cadinene ether	1550	0.841-1.147
53	trans-Cadinene ether	1556	0.404-0.922
54	β -Calacorene	1560	0.386-0.989
55	Germacrene D-4-ol	1574	0.790-2.801
56	Pentyl salicylate	1576	0.239-1.548
57	(-)-Spathulenol	1578	0.631-0.910
58	Caryophyllene oxide	1582	0.085-0.522
59	Globulol	1590	0.598-3.061

60	Guaiol	1600	0.068-1.016
61	Junenol	1618	0.00-0.898
62	γ -Eudesmol	1630	1.345-3.713
63	tau.-Cadinol	1638	0.230-0.879
64	tau.-Muurolol	1642	1.071-1.229
65	β -Eudesmol	1650	1.006-1.837
66	α -Eudesmol	1650	0.698-3.693
67	Geranyl valerate	1656	0.252-0.921
68	(6Z)-Pentadecen-2-one	1667	0.285-0.861
69	Germacra-4(15),5,10(14)-trien-1 α -ol	1686	0.299-0.562
70	n-Heptadecane	1700	0.092-0.137
71	(2Z,6E)-Farnesol	1722	0.200-0.709
72	(2E,6E)-Farnesal	1740	0.090-0.159
73	14-oxy- α -Muurolene	1767	0.306-0.934
74	14-hydroxy- α -Muurolene	1778	0.251-0.449
75	(2E,6E)-Methyl farnesoate	1784	0.549-1.185
76	1-Octadecene	1791	0.36-0.938
77	n-Octadecane	1800	0.00-0.126
78	Methyl octadecanoate	2124	0.00-0.158
79	n-Docosane	2200	0.00-0.119