

**Dr. Duke's Phytochemical and Ethnobotanical Databases**  
**Chemicals found in Rosmarinus officinalis**

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Refernce Citation
0	CARBOHYDRATES	Plant	207000.0	704660.0	0.20773459165711552	USDA's Ag Handbook 8 and sequelae)
0	WATER	Plant	77900.0	677700.0	-0.3991263597175959	USDA's Ag Handbook 8 and sequelae)
0	CINEOL	Essential Oil	42000.0	512000.0	1.4134461736845854	--
15	FIBER	Leaf	141000.0	437480.0	3.412377345021209	USDA's Ag Handbook 8 and sequelae)
0	1,8-CINEOL	Shoot Essent. Oil		369100.0	1.401761438961571	--
22	MYRCENE	Essential Oil	179000.0	295000.0	3.424012020787341	--
0	1,8-CINEOL	Leaf Essent. Oil		293000.0	1.40897193197541	--
28	ALPHA-PINENE	Leaf Essent. Oil		276000.0	0.7651977457562714	--
0	BORNEOL-ACETATE	Essential Oil	18000.0	266000.0	2.0935665339307117	--
28	ALPHA-PINENE	Essential Oil	79000.0	250000.0	1.6397978991812734	--
35	BORNEOL	Essential Oil	21000.0	223000.0	1.290576148792746	--
12	PINENE	Essential Oil		214000.0	1.0	--
15	FIBER	Plant	165420.0	206338.0	-0.12175689933639762	USDA's Ag Handbook 8 and sequelae)
89	URSOLIC-ACID	Leaf	28000.0	192000.0	3.917105845150017	--
0	FAT	Plant	58600.0	187418.0	1.9801843153178358	USDA's Ag Handbook 8 and sequelae)
35	BORNEOL	Shoot Essent. Oil		175000.0	1.4110728681925218	--
0	1,8-CINEOL	Essential Oil	145000.0	153000.0	0.9821712273555459	--
0	BETA-CARYOPHYLLENE	Essential Oil	145000.0	153000.0	0.3911205209785834	--
41	CAMPHOR	Leaf Essent. Oil		121000.0	-0.08961362373307821	--
9	CAMPHENE	Essential Oil	40000.0	106000.0	2.4924380801760044	--
16	P-CYMENE	Shoot Essent. Oil		105000.0	0.8884726463111513	--
0	PROTEIN	Plant	33100.0	102700.0	-0.5799181235187094	USDA's Ag Handbook 8 and sequelae)
41	CAMPHOR	Essential Oil	18000.0	93000.0	-0.6926999479228944	--
0	SFA	Leaf	28380.0	88055.0	3.405931882382446	USDA's Ag Handbook 8 and sequelae)
9	CAMPHENE	Leaf Essent. Oil		85000.0	2.146113125386858	--
13	BETA-PINENE	Essential Oil	34000.0	85000.0	1.1569843346128765	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
41	CAMPHOR	Shoot Essent. Oil		76300.0	1.0	--
0	ASH	Plant	23500.0	75570.0	-0.820964878423527	USDA's Ag Handbook 8 and sequelae)
23	TERPINEN-4-OL	Essential Oil	40000.0	68000.0	0.04360237655488514	--
13	PALMITIC-ACID	Leaf	19210.0	59600.0	0.7690832940819118	USDA's Ag Handbook 8 and sequelae)
16	P-CYMENE	Essential Oil		50000.0	-0.22059304446605782	--
35	BORNEOL	Leaf Essent. Oil		47000.0	-0.04262331152833271	--
60	LIMONENE	Essential Oil		46000.0	-0.4722952157293057	--
20	CARNOSOL	Leaf	530.0	46000.0	1.7312833183134486	--
57	ROSMARINIC-ACID	Inflorescence	25000.0	43000.0	0.3023882331879371	--
89	URSOLIC-ACID	Plant	28000.0	41000.0	1.1620768107081578	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
57	ROSMARINIC-ACID	Tissue Culture		38957.0		--
9	CAMPHENE	Shoot Essent. Oil		38100.0	1.6759881269456052	--
23	TERPINEN-4-OL	Shoot Essent. Oil		36300.0	-0.7721971735984355	--
13	MUFA	Leaf	11600.0	35990.0	2.7689135561729756	USDA's Ag Handbook 8 and sequelae)
13	ALPHA-TERPINENE	Shoot Essent. Oil		32900.0	1.5953724799280489	--
18	OLEIC-ACID	Leaf	10240.0	31770.0	3.8781338681899733	USDA's Ag Handbook 8 and sequelae)
4	PUFA	Leaf	9140.0	28360.0	1.2060335806311215	USDA's Ag Handbook 8 and sequelae)
0	EO	Plant	3300.0	25000.0	1.159827080519081	--
57	ROSMARINIC-ACID	Plant		25000.0	-0.20483756339875825	--
0	BORNEOL-ACETATE	Leaf Essent. Oil		25000.0	-0.37373658686849653	--
23	ALPHA-TERPINEOL	Leaf Essent. Oil		24000.0	-0.3797351297049885	--
60	LIMONENE	Leaf Essent. Oil		23000.0	-0.5765559606907152	--
0	DELTA-TERPINEOL	Leaf Essent. Oil		22000.0		--
13	BETA-PINENE	Leaf Essent. Oil		21000.0	-0.012734377596635897	--
14	POTASSIUM	Leaf	6680.0	20725.0	-0.42475693197095393	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CIS-SABINENE-HYDRATE	Shoot Essent. Oil		19300.0	1.0	--
16	P-CYMENE	Leaf Essent. Oil		19000.0	-0.4963398028674626	--
37	CARVACROL	Shoot Essent. Oil		17300.0	-0.6928503483209176	--
0	BORNEOL-ACETATE	Shoot Essent. Oil		16400.0	1.0	--
28	CALCIUM	Plant	3170.0	16150.0	0.2738994850321915	USDA's Ag Handbook 8 and sequelae)
11	GAMMA-TERPINENE	Shoot Essent. Oil		15200.0	-1.0	--
0	TRANS-SABINENE-HYDRATE	Shoot Essent. Oil		14400.0	1.0	--
22	MYRCENE	Leaf Essent. Oil		14000.0	-0.31228842453179745	--
27	LINOLEIC-ACID	Leaf	4470.0	13870.0	0.9616125776478976	USDA's Ag Handbook 8 and sequelae)
57	ROSMARINIC-ACID	Shoot		13500.0	-0.2218024185144439	--
0	LINOLENIC-ACID	Leaf	4140.0	12845.0	-0.3143340957268107	USDA's Ag Handbook 8 and sequelae)
0	EO	Shoot	6200.0	12600.0	0.21321586861057035	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	EO	Shoot	6200.0	12600.0	0.21321586861057035	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	BETA-CARYOPHYLLENE	Shoot Essent. Oil		12200.0	-1.1415055308027873	--
3	ASPARTIC-ACID	Leaf	3910.0	12130.0	-0.9406377119029301	USDA's Ag Handbook 8 and sequelae)
53	LINALOOL	Leaf Essent. Oil		12000.0	-0.6198630819228325	--
14	POTASSIUM	Plant	8842.0	11284.0	-0.7331834369804888	USDA's Ag Handbook 8 and sequelae)
8	GLUTAMIC-ACID	Leaf	3610.0	11200.0	-1.4449537951023277	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
64	OLEANOLIC-ACID	Plant		10500.0	1.9122846257333326	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	CINEOLE	Plant	168.0	9728.0	2.209936664579799	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
71	THYMOL	Shoot Essent. Oil		9000.0	-0.49096416476513904	--
23	ALPHA-TERPINEOL	Shoot Essent. Oil		8300.0	-0.8748177652797063	--
60	LIMONENE	Shoot Essent. Oil		8200.0	-0.8496388001809575	--
67	1,8-CINEOLE	Plant	0.0	8125.0	1.7189523175721406	--
0	LINALOOL-ACETATE	Essential Oil		8000.0	-0.6545361082116954	--
2	LEUCINE	Leaf	2490.0	7725.0	-1.353434147748554	USDA's Ag Handbook 8 and sequelae)
7	PIPERITONE	Shoot Essent. Oil		7600.0	-1.0	--
28	ALPHA-PINENE	Plant	34.0	7225.0	4.631569388933519	--
8	STEARIC-ACID	Leaf	2310.0	7165.0	4.046790825325211	USDA's Ag Handbook 8 and sequelae)
5	VERBENONE	Essential Oil		6000.0	1.0	--
11	GAMMA-TERPINENE	Leaf Essent. Oil		6000.0	-0.6461489670114838	--
23	ALPHA-TERPINEOL	Essential Oil		6000.0	-0.507329957387113	--
41	CAMPHOR	Plant	60.0	5800.0	2.293377121920263	--
22	MYRCENE	Plant	0.1	5605.0	5.681865313894507	--
0	EO	Shoot		5400.0	-0.45321379726495464	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	CIS-PIPERITOL	Shoot Essent. Oil		5400.0		--
3	ALANINE	Leaf	1720.0	5335.0	-1.688888835822415	USDA's Ag Handbook 8 and sequelae)
7	PHENYLALANINE	Leaf	1690.0	5245.0	-1.2984546596026252	USDA's Ag Handbook 8 and sequelae)
3	VALINE	Leaf	1650.0	5120.0	-2.1230761876031146	USDA's Ag Handbook 8 and sequelae)
12	BORNYL-ACETATE	Plant	0.1	5054.0	2.7627398976776254	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	CARNOSIC-ACID	Leaf	548.4	5000.0	0.11726849611108531	--
12	GLYCINE	Leaf	1590.0	4935.0	-1.4556508695098707	USDA's Ag Handbook 8 and sequelae)
14	ARGININE	Plant	1530.0	4745.0	-1.1616107572945837	USDA's Ag Handbook 8 and sequelae)
4	LYSINE	Leaf	1430.0	4435.0	-1.91999880714723	USDA's Ag Handbook 8 and sequelae)
28	ALPHA-PINENE	Shoot Essent. Oil		4400.0	-0.7390731531173163	--
13	BETA-PINENE	Shoot Essent. Oil		4400.0	-0.4055574998009149	--
5	SABINENE	Shoot Essent. Oil		4400.0	-0.6166885160539565	--
35	BORNEOL	Plant	12.0	4237.0	3.157950276326836	--
3	ISOLEUCINE	Leaf	1360.0	4220.0	-2.0207083020277814	USDA's Ag Handbook 8 and sequelae)
0	PROLINE	Leaf	1360.0	4220.0	-1.0174470705136651	USDA's Ag Handbook 8 and sequelae)
4	THREONINE	Leaf	1360.0	4220.0	-1.8672306719875797	USDA's Ag Handbook 8 and sequelae)
0	KILOCALORIES	Leaf	1310.0	4065.0	1.687539945571432	USDA's Ag Handbook 8 and sequelae)
53	LINALOOL	Essential Oil		4000.0	-0.5652093594549852	--
1	SERINE	Leaf	1290.0	4000.0	-1.5314566366044275	USDA's Ag Handbook 8 and sequelae)
19	D-LIMONENE	Essential Oil		4000.0	-1.2460381869286639	--
41	CAMPHOR	Shoot	1885.0	3920.0	-0.009976007342779595	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
22	MYRCENE	Shoot Essent. Oil		3800.0	-0.6135160435733102	--
0	TRANS-PIPERITOL	Shoot Essent. Oil		3800.0		--
11	ALPHA-PHELLANDRENE	Shoot Essent. Oil		3800.0	-0.7008088432805002	--
6	MYRISTIC-ACID	Leaf	1210.0	3755.0	1.8995312847931554	USDA's Ag Handbook 8 and sequelae)
0	ROSMARIC-ACID	Plant	3000.0	3500.0		Abstract (See species file)
57	ROSMARINIC-ACID	Leaf		3500.0	-0.5431262472392765	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-THUJENE	Shoot Essent. Oil		3500.0	-1.4107399372790863	--
0	BORNEOL-FORMATE	Shoot Essent. Oil		3200.0		--
8	TYROSINE	Leaf	1000.0	3100.0	-1.3626248647151018	USDA's Ag Handbook 8 and sequelae)
9	TERPINOLENE	Leaf Essent. Oil		3000.0	-0.49764555396661486	--
28	ALPHA-PINENE	Shoot	1080.0	3000.0	0.15174732120992368	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
13	ALPHA-TERPINENE	Leaf Essent. Oil		3000.0	-0.48864658829747176	--
67	1,8-CINEOLE	Shoot	795.0	2960.0	-0.09314705764762783	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
65	MAGNESIUM	Leaf	910.0	2825.0	-0.5022614414063324	USDA's Ag Handbook 8 and sequelae)
2	ALPHA-HUMULENE	Shoot Essent. Oil		2500.0	-1.3406010876261014	--
65	MAGNESIUM	Plant	2142.0	2483.0	-0.49150806235597344	USDA's Ag Handbook 8 and sequelae)
9	CAMPHENE	Plant	23.0	2350.0	3.414039648428031	--
9	CAMPHENE	Shoot	1035.0	2280.0	0.07608391021702815	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
67	1,8-CINEOLE	Shoot		2250.0	-0.10332965790510984	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	ALPHA-PINENE	Shoot	990.0	2180.0	0.0699671282541998	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	BETA-CARYOPHYLLENE	Plant	12.0	2075.0	1.8180153467039157	--
1	TOLUENE	Plant	436.0	2071.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
7	HISTIDINE	Leaf	660.0	2050.0	-1.669327249373123	USDA's Ag Handbook 8 and sequelae)
4	PHOSPHORUS	Plant	490.0	2050.0	-0.7393816155319108	USDA's Ag Handbook 8 and sequelae)
2	PALMITOLEIC-ACID	Leaf	660.0	2050.0	2.730912274486039	USDA's Ag Handbook 8 and sequelae)
0	OCTAN-3-ONE	Leaf Essent. Oil		2000.0		--
60	LIMONENE	Plant	0.0	1950.0	0.7126407219327489	--
29	TRYPTOPHAN	Leaf	510.0	1580.0	-1.4627190244908572	USDA's Ag Handbook 8 and sequelae)
23	ALPHA-TERPINEOL	Plant	24.0	1555.0	0.7230158138601487	--
0	GADOLEIC-ACID	Leaf	480.0	1490.0	-1.262306245974348	USDA's Ag Handbook 8 and sequelae)
15	METHIONINE	Leaf	470.0	1460.0	-1.3521813230101367	USDA's Ag Handbook 8 and sequelae)
9	CAMPHENE	Shoot	355.0	1435.0	-0.0018785435817184589	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
13	BETA-PINENE	Plant	17.0	1425.0	1.10313470081686	--
41	CAMPHOR	Shoot	320.0	1410.0	-0.10429734174069223	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	EO	Leaf		1400.0	-0.8914753774624231	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	EO	Leaf		1400.0	-0.8914753774624231	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
2	PHYTOSTEROLS	Plant	440.0	1365.0	0.3637682970777659	USDA's Ag Handbook 8 and sequelae)
67	1,8-CINEOLE	Shoot	630.0	1360.0	-0.11609376245322109	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
23	ALPHA-TERPINEOL	Shoot	130.0	1160.0	0.9102083879345134	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
2	CYSTINE	Leaf	370.0	1150.0	-1.4883975986960907	USDA's Ag Handbook 8 and sequelae)
41	CAMPHOR	Shoot		1030.0	-0.11857706567344393	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
35	BORNEOL	Shoot	100.0	1020.0	0.5875208479122355	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
23	TERPINEN-4-OL	Leaf Essent. Oil		1000.0	-0.5406868834711872	--



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	P-MENTH-TRANS-2-EN-1-OL	Leaf Essent. Oil		1000.0		--
0	MILTIORONE	Leaf		1000.0		--
11	ALPHA-PHELLANDRENE	Leaf Essent. Oil		1000.0	-0.8574494059207024	--
16	P-CYMENE	Plant	25.0	950.0	-0.17295799316167934	--
5	VERBENONE	Shoot	155.0	905.0	1.04522130777922	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	VERBENONE	Plant	0.1	905.0	1.3290176470002508	--
35	BORNEOL	Shoot	145.0	895.0	0.4666492247534293	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
1	SODIUM	Leaf	260.0	805.0	-0.5043113633571763	USDA's Ag Handbook 8 and sequelae)
19	CARVONE	Plant	16.0	760.0	-0.2993394259969154	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
12	STIGMASTEROL	Shoot	50.0	700.0	1.0	--
7	SALICYLATES	Leaf	70.0	680.0	0.9029335850598277	--
112	ASCORBIC-ACID	Leaf	11.0	675.0	-0.3812886982384174	USDA's Ag Handbook 8 and sequelae)
112	ASCORBIC-ACID	Plant	612.0	673.0	-0.4356928511976825	USDA's Ag Handbook 8 and sequelae)
0	GAMMA-MUUROLENE	Plant	70.0	665.0	2.2166884580376487	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-AMORPHENE	Plant	70.0	665.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	3-O-ACETYLOLEANOLIC-ACID	Shoot	11.0	640.0		--
41	CAMPHOR	Leaf		595.0	-0.23556365657178782	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
1	SODIUM	Plant	462.0	592.0	-0.2713071343792208	--
3	CAPRIC-ACID	Leaf	190.0	590.0	1.0	USDA's Ag Handbook 8 and sequelae)
0	LINALOL	Plant		585.0	-0.29996294523455175	--
53	LINALOOL	Plant	0.1	585.0	-0.5851760824793115	--
28	ALPHA-PINENE	Shoot		565.0	-0.09109995909152464	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
13	ALPHA-TERPINENE	Shoot	185.0	555.0	1.074125152636713	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
13	ALPHA-TERPINENE	Plant	4.0	555.0	0.33477249389463415	--
47	BETA-SITOSTEROL	Plant	520.0	550.0	0.01771498305724803	--
13	ALPHA-TERPINENE	Shoot	200.0	540.0	1.0320888554231715	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
60	LIMONENE	Shoot	185.0	530.0	-0.058642900438694794	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
13	BETA-PINENE	Shoot	135.0	530.0	-0.08397494056929995	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
23	TERPINEN-4-OL	Plant	4.0	521.0	-0.05451922123183026	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
16	P-CYMENE	Shoot	190.0	480.0	-0.12089328222793702	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	ALPHA-THUJENE	Plant	1.0	475.0	-0.274602614471785	--
16	P-CYMENE	Shoot	100.0	465.0	-0.13278420007352634	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
7	LAURIC-ACID	Leaf	140.0	435.0	0.057251035280278986	USDA's Ag Handbook 8 and sequelae)
0	DELTA-TERPINEOL	Plant	7.0	418.0	1.3915449098641963	--
6	IRON	Leaf	65.0	400.0	0.09331686889519585	USDA's Ag Handbook 8 and sequelae)
11	GAMMA-TERPINENE	Plant	4.0	400.0	-0.3712853066248845	--
6	IRON	Plant	220.0	400.0	-0.2672486162776693	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	ALPHA-THUJONE	Plant	84.0	399.0	0.027761264926608933	--
0	(E)-BETA-OCIMENE	Shoot		380.0	4.150712157567762	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
35	GERANIOL	Plant	50.0	370.0	-0.386079758050379	J. Ethnopharmacology, 39: 167.
60	LIMONENE	Shoot	175.0	365.0	-0.14263599643227207	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	3-HEXANONE	Plant	74.0	351.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	TERPINOLENE	Plant	12.0	350.0	2.3514858768394373	--
31	CARYOPHYLLENE	Plant	16.0	340.0	-0.12590614084032536	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	CAMPHENE	Shoot		335.0	-0.1033681284084892	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
8	DELTA-3-CARENE	Plant	0.1	330.0	0.6568103606850512	--
0	BETA-AMYRENONE	Shoot	30.0	300.0		--
11	GAMMA-TERPINENE	Shoot	105.0	300.0	-0.18705418029621768	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	ALPHA-AMYRENONE	Shoot	30.0	300.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	ALPHA-TERPINEOL	Shoot	25.0	290.0	0.013173817725331886	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
13	BETA-PINENE	Shoot		285.0	-0.10113670308865734	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
6	FENCHONE	Plant		250.0	1.9981089850478708	--
23	TERPINEN-4-OL	Shoot	25.0	240.0	-0.06769648623281556	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
1	LUTEOLIN-3'-O-(4''-O-ACETYL)-BETA-D-GLUCURONIDE	Leaf		235.0		--
11	GAMMA-TERPINENE	Shoot	37.0	225.0	-0.23887428149253107	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
11	GAMMA-TERPINENE	Shoot	37.0	225.0	-0.23887428149253107	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	BETA-THUJONE	Plant	11.0	209.0	-0.5418571305900116	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	BETA-PINENE	Shoot	75.0	200.0	-0.1070907839627201	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	BETA-ELEMENE	Shoot	3.0	200.0	0.33839525785377406	Bandoni, A.L., Mizrahi, I., and Juarez, M.A. 1991. The Essential Oil of Rosmarinus officinalis Growing in Argentina. J. Ess. Oil Res., 3: 11.
12	BORNYL-ACETATE	Shoot		195.0	-0.08394062358135544	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	MESITY-ALCOHOL	Plant	40.0	190.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	TERPINEN-4-OL	Shoot	60.0	190.0	-0.08842230683130393	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	SABINENE	Plant	0.1	190.0	-0.3161195945060451	--
35	BORNEOL	Shoot		180.0	-0.22473645971494194	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
5	VERBENONE	Leaf		175.0	0.5258194373028001	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	VERBENONE	Leaf		175.0	0.5258194373028001	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
12	BORNYL-ACETATE	Shoot	70.0	175.0	-0.11715337786974139	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
41	CAMPHOR	Leaf		160.0	-0.2453152521372931	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	3-O-ACETYLRURSOLIC-ACID	Shoot	11.0	160.0	1.0	--
31	HESPERIDIN	Leaf		160.0	-1.4142135623730951	--
0	LINALOOL-ACETATE	Plant	32.0	152.0	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	LINALOL-ACETATE	Plant	32.0	152.0	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-CARYOPHYLLENE	Shoot	31.0	150.0	-0.10586983743289166	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
1	LUTEOLIN-3'-O-(3''-O-ACETYL)-BETA-D-GLUCURONIDE	Leaf		144.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	P-MENTH-3-EN-1-OL	Plant	28.0	133.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	ALPHA-PHELLANDRENE	Plant	0.1	133.0	-0.24260862822033083	--
0	ALPHA-FENCHYL-ALCOHOL	Plant	28.0	133.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	3,5,5-TRIMETHYLHEXAN-1-OL	Plant	28.0	133.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-OCIMENE	Plant	4.0	130.0	-0.5263129552675795	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
11	ALPHA-PHELLANDRENE	Shoot	50.0	125.0	0.008062862694196265	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	CIS-PINAN-3-ONE	Leaf		110.0	1.4142135623730954	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	4-TERPINENYL-ACETATE	Leaf		110.0	1.7313443526368413	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
12	BORNYL-ACETATE	Leaf		105.0	-0.35270090949472066	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
12	BORNYL-ACETATE	Leaf		105.0	-0.35270090949472066	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
60	LIMONENE	Leaf		100.0	-0.34258415038200146	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
60	LIMONENE	Leaf		100.0	-0.34258415038200146	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	BETA-CARYOPHYLLENE	Shoot	50.0	100.0	-0.20723698248511585	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
22	MYRCENE	Shoot	50.0	100.0	-0.22820195968704796	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	LONGIFOLENE	Plant	20.0	95.0	0.04103561461046703	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-BETA-TERPINEOL	Plant	20.0	95.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
29	SAFROLE	Plant	32.0	95.0	-1.4038812701094596	--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	ISOBORNEOL	Plant	7.0	95.0	1.6652751280418299	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-FENCHYL-ACETATE	Plant	20.0	95.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	ROSMANOL	Leaf	16.0	92.0		--
0	BETA-CARYOPHYLLENE	Shoot	12.0	90.0	-0.2275104114955607	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus ericalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	LINALOL	Leaf		90.0	-0.38929077061528844	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
12	BORNYL-ACETATE	Shoot		90.0	-0.2583075835953817	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus ericalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	LINALOL	Leaf		90.0	-0.38929077061528844	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALPHA-THUJENE	Shoot	37.0	90.0	1.065963780167936	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus ericalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-LIMONENE	Plant	16.0	76.0	-1.0	Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	DELTA-CADINENE	Shoot	0.1	75.0	0.30150054962345607	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	SABINENE	Shoot	19.0	75.0	-0.21606587909824357	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
9	DELTA-CADINENE	Plant	0.1	75.0	-0.02966515133236494	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	(Z)-BETA-OCIMENE	Shoot	6.0	75.0	-0.10296984552421623	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	(Z)-BETA-OCIMENE	Shoot	6.0	75.0	-0.10296984552421623	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
8	CARYOPHYLLENE-OXIDE	Shoot	12.0	75.0	-0.2347984467940687	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
9	DELTA-CADINENE	Shoot		75.0	0.30150054962345607	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
8	CARYOPHYLLENE-OXIDE	Plant	0.1	75.0	-0.27368108946552483	--
23	ALPHA-TERPINEOL	Leaf		70.0	-0.4673712315037548	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
23	ALPHA-TERPINEOL	Leaf		70.0	-0.4673712315037548	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	LINALOL	Shoot		65.0	-0.21047856322817093	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
53	LINALOOL	Shoot		65.0	-0.2184175000153399	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LINALOL	Shoot	30.0	65.0	-0.21047856322817093	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
9	TERPINOLENE	Shoot	25.0	65.0	1.0715722256541234	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
9	TERPINOLENE	Shoot	19.0	65.0	1.0715722256541234	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
53	BETA-CAROTENE	Leaf	15.0	55.0	-0.8984170900936875	USDA's Ag Handbook 8 and sequelae)
2	ALPHA-HUMULENE	Shoot	12.0	50.0	0.060773186015391556	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
11	ALPHA-PHELLANDRENE	Shoot	19.0	50.0	-0.18238371083023522	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
11	ALPHA-PHELLANDRENE	Shoot		50.0	-0.18238371083023522	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-THUJENE	Shoot	12.0	50.0	0.3446782919633604	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
23	ALPHA-TERPINEOL	Shoot		48.0	-0.23634614318342884	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
2	ALPHA-HUMULENE	Shoot		42.0	-0.016755784495338003	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
2	TRANS-PINOCARVEOL	Leaf		42.0	-0.5006778332885271	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	3-OCTANONE	Plant	20.0	40.0	-0.23819021088318515	--
23	TERPINEN-4-OL	Leaf		40.0	-0.3174828930218612	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
23	TERPINEN-4-OL	Leaf		40.0	-0.3174828930218612	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
4	BORON	Plant	22.0	39.0	-0.4161725383660909	Betting on Boron, Unpublished draft by J. A. Duke on file at USDA, draft and papers relating to boron percentages. Includes Internat. Z. Vit. Ern. Forschung 43:1973 (boron).
77	ZINC	Leaf	9.0	38.0	-0.29356143351875613	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ALPHA-HUMULENE	Shoot	19.0	38.0	-0.05552026975070278	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
2	MYRTENOL	Plant	8.0	38.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	AR-CURCUMENE	Plant	8.0	38.0	-0.3223991657907058	--
77	ZINC	Plant	30.0	38.0	-0.13949874585523866	USDA's Ag Handbook 8 and sequelae)
0	BETA-CARYOPHYLLENE	Leaf		38.0	-0.31622393773536245	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	BETA-CARYOPHYLLENE	Leaf		38.0	-0.31622393773536245	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
8	CARYOPHYLLENE-OXIDE	Shoot		38.0	-0.3159357654555579	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
8	CARYOPHYLLENE-OXIDE	Shoot	0.1	38.0	-0.3159357654555579	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	METHYL-HEPTENONE	Plant	8.0	38.0	-0.32262834615192726	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	DELTA-CADINENE	Shoot		38.0	-0.07527677723146986	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
28	ALPHA-PINENE	Leaf		34.0	-0.22233708878144057	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
28	ALPHA-PINENE	Leaf		34.0	-0.22233708878144057	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	TRANS-BETA-TERPINEOL	Plant	7.0	34.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LAVANDULOL	Plant	7.0	34.0	-1.4064544997175097	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-MYRTENOL	Leaf		32.0		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
9	BENZYL-ALCOHOL	Plant	7.0	32.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TRANS-MYRTENOL	Leaf		32.0		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	TRANS-MYRTENOL	Leaf		32.0		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
2	ELEMOL	Plant	7.0	32.0	-0.40950982015523396	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GAMMA-EUDESOL	Plant	7.0	32.0	1.0	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	TRANS-PINOCARVEOL	Leaf		32.0	-0.5428725743449665	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
2	TRANS-PINOCARVEOL	Leaf		32.0	-0.5428725743449665	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
1	ROSMADIAL	Leaf		30.0		--
39	NIACIN	Leaf	9.0	30.0	-0.8210516327096217	USDA's Ag Handbook 8 and sequelae)
14	MANGANESE	Leaf	10.0	30.0	-0.4100121305716282	USDA's Ag Handbook 8 and sequelae)
0	EPIROSMANOL	Leaf	21.0	26.0		--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	P-CYMENE	Leaf		25.0	-0.37934356798772423	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
16	P-CYMENE	Leaf		25.0	-0.37934356798772423	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	(E)-BETA-OCIMENE	Shoot	12.0	25.0	-0.3607978123117648	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
11	PANTOTHENIC-ACID	Leaf	8.0	25.0	-0.27435519903951683	USDA's Ag Handbook 8 and sequelae)
35	BORNEOL	Leaf		24.0	-0.44580359587567375	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
35	BORNEOL	Leaf		24.0	-0.44580359587567375	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
19	CARVONE	Leaf		23.0	-0.27814264544072154	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
19	CARVONE	Leaf		23.0	-0.27814264544072154	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
9	CAMPHENE	Leaf		23.0	-0.18399918154181208	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
9	CAMPHENE	Leaf		23.0	-0.18399918154181208	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
53	BETA-CAROTENE	Plant	19.0	21.0	-0.6134455252260276	--
89	URSOLIC-ACID	Shoot		20.0	-0.7331878721293699	--
22	MYRCENE	Shoot		20.0	-0.3195114179355978	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	ROFFICERONE	Shoot		20.0		--
0	3-OXO-20-BETA-HYDROXYURS-12-ENE	Shoot		20.0		--
64	OLEANOLIC-ACID	Shoot		20.0	1.0279924897351953	--
0	CIS-ALPHA-BISABOLENE	Plant	4.0	19.0	-0.9325556071743418	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	3-OCTANOL	Plant	4.0	19.0	-0.6136125750525936	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	ISOPULEGOL	Plant	4.0	19.0	-0.6976369302046033	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
12	COPPER	Leaf	3.0	19.0	-0.23824503635463365	USDA's Ag Handbook 8 and sequelae)

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
14	MANGANESE	Plant	18.0	19.0	-0.5587284001158601	USDA's Ag Handbook 8 and sequelae)
0	ISOPINOCARVEOL	Plant	4.0	19.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DIMETHYL-STYRENE	Plant	1.0	19.0		--
0	TRANS-SABINENE-HYDRATE	Plant		19.0	-0.36153576925443864	--
8	CARYOPHYLLENE-OXIDE	Leaf		18.0	-0.3781728702778057	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	7-METHOXY-ROSMANOL	Shoot		18.0	1.0	--
8	CARYOPHYLLENE-OXIDE	Leaf		18.0	-0.3781728702778057	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	BETA-CARYOPHYLLENE	Shoot		18.0	-0.37347910037076365	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
23	TERPINEN-4-OL	Shoot		18.0	-0.159719129690104	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	DELTA-TERPINENE	Shoot		18.0		Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	TRANS-BETA-OCIMENE	Shoot		18.0	-0.3849093900349968	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CIS-MYRTENOL	Leaf		17.0	0.7071067811865475	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
1	ISOROSMANOL	Flower		17.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
13	BETA-PINENE	Leaf		17.0	-0.40405480500606267	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
13	BETA-PINENE	Leaf		17.0	-0.40405480500606267	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
1	ISOROSMANOL	Leaf		17.0		--
0	CIS-PINAN-3-ONE	Leaf		17.0	-0.7071067811865476	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	CIS-PINAN-3-ONE	Leaf		17.0	-0.7071067811865476	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	CIS-MYRTENOL	Leaf		17.0	0.7071067811865475	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	CAMPESTEROL	Shoot	10.0	16.0	-1.0	--
0	CIRSIMARITRIN	Shoot		16.0		Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
9	CIRSIMARITIN	Shoot		16.0	-1.0	--
2	ALPHA-HUMULENE	Shoot		13.0	-0.2977983025967326	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	(Z)-BETA-OCIMENE	Shoot		13.0	-0.38788481496960825	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	LINALOL	Shoot	6.0	13.0	-0.21991551145568244	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
10	ALPHA-AMYRIN	Shoot		13.0		--
8	DELTA-3-CARENE	Shoot		13.0	-0.17221505568266005	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(E)-BETA-OCIMENE	Shoot		13.0	-0.5132995577724812	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	BETA-THUJONE	Leaf		13.0	-0.5848576926513763	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
5	BETA-THUJONE	Leaf		13.0	-0.5848576926513763	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
9	BETA-AMYRIN	Shoot		13.0	--	--
0	(E)-BETA-OCIMENE	Shoot	0.1	13.0	-0.5132995577724812	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
13	BETULIN	Shoot		12.1	-0.6112769841205962	--
0	4-TERPINENYL-ACETATE	Leaf		12.0	-0.5537970151531986	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
2	ALPHA-HUMULENE	Leaf		12.0	-0.4476925936768922	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ALPHA-HUMULENE	Leaf		12.0	-0.4476925936768922	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	4-TERPINENYL-ACETATE	Leaf		12.0	-0.5537970151531986	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	3-ACETYLRURSOLIC-ACID	Shoot		11.0	--	--
39	NIACIN	Plant	10.0	11.0	-0.9209353845164209	USDA's Ag Handbook 8 and sequelae)
0	CIS-MYRTENOL	Leaf		11.0	-1.4142135623730956	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	VIT-B-6	Leaf	3.4	10.0	-0.5119230867007493	USDA's Ag Handbook 8 and sequelae)
7	ISOBORNEOL	Shoot		10.0	-0.6992413073631504	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
9	TERPINOLENE	Shoot		9.0	-0.5458952847671948	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
9	DELTA-CADINENE	Leaf		9.0	-0.4249042148056453	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	DELTA-CADINENE	Leaf		9.0	-0.4249042148056453	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
60	LIMONENE	Shoot		9.0	-0.3238574641517479	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
3	PIPERITENONE	Leaf		8.0	-0.8006450376571325	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
5	EUGENOL-METHYL-ETHER	Leaf		7.0	-0.6682004453007676	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
22	MYRCENE	Leaf		7.0	-0.1701495776094221	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
22	MYRCENE	Leaf		7.0	-0.1701495776094221	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
12	COPPER	Plant	5.0	6.0	-0.8877762155435414	USDA's Ag Handbook 8 and sequelae)
31	THIAMIN	Leaf	3.0	6.0	-0.4802995853174522	USDA's Ag Handbook 8 and sequelae)
16	P-CYMENE	Shoot		6.0	-0.4966462861485599	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
11	ALPHA-PHELLANDRENE	Leaf		6.0	-0.310066323626633	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
37	CARVACROL	Leaf		6.0	-0.5866456396390065	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
11	ALPHA-PHELLANDRENE	Leaf		6.0	-0.310066323626633	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
37	CARVACROL	Leaf	5.0	6.0	-0.5866456396390065	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
31	THIAMIN	Plant	5.0	6.0	-0.13599687437442232	USDA's Ag Handbook 8 and sequelae)
0	ALPHA-TERPINENYL-ACETATE	Leaf		6.0	1.4142135623730958	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
1	CHOLESTEROL	Shoot		6.0		--
0	CIS-BETA-OCIMENE	Shoot		6.0	-0.5169802790571685	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	EUGENOL-METHYL-ETHER	Leaf		5.0	-0.6690525606401523	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
5	EUGENOL-METHYL-ETHER	Leaf		5.0	-0.6690525606401523	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	CALAMENENE	Plant	1.0	5.0	-0.6803346136864845	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	ALPHA-TERPINENE	Shoot		5.0	-0.46720574519314034	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
1	TRANS-CARVEOL	Plant	1.0	5.0	-0.6925284585040422	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
15	RIBOFLAVIN	Plant	1.5	5.0	-0.44680999032447544	USDA's Ag Handbook 8 and sequelae)
37	CARVACROL	Leaf		5.0	-0.5882708994072298	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	NOPOL	Plant	1.0	5.0		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GAMMA-CADINENE	Leaf		5.0	-0.4320981206779557	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-TERPINENYL-ACETATE	Leaf		5.0	-0.707106781186547	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	P-CYMEN-8-OL	Plant	1.0	5.0	-0.7143990235851938	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALLO-AROMADENDRENE	Leaf		5.0	-0.20127722200396397	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALPHA-TERPINENYL-ACETATE	Leaf		5.0	-0.707106781186547	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	NEO-THUJOL	Leaf		5.0	1.414213562373095	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALLO-AROMADENDRENE	Leaf	4.0	5.0	-0.20127722200396397	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
3	PIPERITENONE	Leaf		4.0	-0.8040717230312268	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	SABINENE	Shoot		4.0	-0.29166306795812047	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	ALPHA-COPAENE	Leaf		4.0	-0.33251171597563606	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
7	LINALYL-ACETATE	Shoot		4.0	-0.33787059889501075	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
13	ALPHA-TERPINENE	Leaf		4.0	-0.3102953993005394	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
13	ALPHA-TERPINENE	Leaf		4.0	-0.3102953993005394	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
11	GAMMA-TERPINENE	Leaf		4.0	-0.3642106646413995	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
11	GAMMA-TERPINENE	Leaf		4.0	-0.3642106646413995	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALLO-AROMADENDRENE	Leaf		4.0	-0.20150848149315131	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
3	PIPERITENONE	Leaf		4.0	-0.8040717230312268	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
2	ISOBORNYL-ACETATE	Shoot		3.0	-1.0	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	EPI-ALPHA-BISABOLOL	Leaf		3.0	0.7071067811865475	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	EPI-ALPHA-BISABOLOL	Leaf		3.0	0.7071067811865475	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	FOLATE	Leaf	1.0	3.0	-1.1832159566199232	USDA's Ag Handbook 8 and sequelae)
21	LUPEOL	Shoot		2.4		--
0	ALPHA-COPAENE	Leaf		2.0	-0.3444107788177234	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-COPAENE	Leaf		2.0	-0.3444107788177234	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	1-S-CIS-CALAMENENE	Leaf		2.0		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	1-S-CIS-CALAMENENE	Leaf		2.0		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALPHA-MUUROLENE	Leaf		2.0	-0.7037504760694602	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
2	TARAXASTEROL	Shoot		2.0		--
0	ALPHA-MUUROLENE	Leaf		2.0	-0.7037504760694602	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	NEO-THUJOL	Leaf		1.5	-0.7071067811865477	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SABINYL-ACETATE	Leaf		1.5	-0.5764506200561957	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	NEO-THUJOL	Leaf		1.5	-0.7071067811865477	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	SABINYL-ACETATE	Leaf		1.5	-0.5764506200561957	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	GAMMA-MUUROLOL	Leaf		1.0	0.7071067811865478	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	GAMMA-CADINENE	Leaf		1.0	-0.4770637328396855	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	GAMMA-CADINENE	Leaf		1.0	-0.4770637328396855	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
5	BETA-THUJONE	Shoot		1.0	-0.31789996136487986	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	1-OCTEN-3-OL	Shoot		1.0	-0.6422252422635093	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	GAMMA-MUUROLOL	Leaf		1.0	0.7071067811865478	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALPHA-THUJENE	Shoot		1.0	-0.5388964310872448	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	2,5-DIMETHYL-STYRENE	Leaf		0.7		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	2,5-DIMETHYL-STYRENE	Leaf		0.7		Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
20	METHYL-EUGENOL	Shoot		0.54	-0.5923297925673616	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
8	DELTA-3-CARENE	Shoot		0.54	-0.30573250687175385	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	BETA-GURJUNENE	Leaf		0.5	-0.4578584138297991	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
35	GERANIOL	Shoot		0.5	-0.5091066559533722	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
76	EUGENOL	Shoot		0.5	-0.4928905950247854	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	BETA-GURJUNENE	Leaf		0.5	-0.4578584138297991	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	CIS-SABINENE-HYDRATE	Leaf		0.4	-0.3210145239523858	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	CIS-SABINENE-HYDRATE	Leaf		0.4	-0.3210145239523858	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
5	VERBENONE	Shoot		0.1	-0.2571527321307905	Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	GAMMA-MUUROLOL	Leaf		0.0	-1.414213562373095	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
67	1,8-CINEOLE	Leaf		0.0	-0.5302244920734527	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
10	NEROL	Shoot		0.0	-0.3182776163323897	Tucker, A. O. and Maciarello, M. J. 1998. The essential oils of some rosemary cultivars. Flavor and Fragrance Journal, 1: 137-142. 1986.
0	CIS-SABINENE-HYDRATE	Leaf		0.0	-0.32118945486441414	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	EPI-ALPHA-BISABOLOL	Leaf		0.0	-1.4142135623730947	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	BETA-GURJUNENE	Leaf		0.0	-0.45810510478552635	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	SABINYL-ACETATE	Leaf		0.0	-0.5791485168739314	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALPHA-MUUROLENE	Leaf		0.0	-0.8132836240958353	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
67	1,8-CINEOLE	Leaf		0.0	-0.5302244920734527	Soliman, F.M., El-Kashoury, M.M., Fathy, M.M. and Gonaïd, M.H. 1994. Analysis and Biological Activity of the Essential Oil of Rosmarinus officinalis L. from Egypt. Flavour and Fragrance J. 9: 29-33.
0	ALPHA-HYDROXYHYDROCAFFEIC-ACID	Plant				Medicinal Plants of China
0	CUBENENE	Plant				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	LABIATIC-ACID	Plant				--
0	ROSMARICINE	Plant				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	OCT-1-EN-3-OL	Resin, Exudate, Sap				--
5	OCTANOIC-ACID	Resin, Exudate, Sap				--
7	CARNOSOLIC-ACID	Leaf				--
11	GAMMA-TERPINENE	Resin, Exudate, Sap				--
20	METHYL-EUGENOL	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	HUMULENE-EPOXIDE-I	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	FENCHOL-ACETATE	Essential Oil				--
9	CAMPHENE	Resin, Exudate, Sap				--
0	BORNEOL-ACETATE	Resin, Exudate, Sap				--
0	TRANS-SABINENE-HYDRATE	Leaf Essent. Oil				--
0	ALPHA-COPAENE	Resin, Exudate, Sap				--
16	ACETIC-ACID	Resin, Exudate, Sap				--
28	ALPHA-PINENE	Resin, Exudate, Sap				--
0	4-HYDROXYBENZOYL-GLUCOSIDE	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ISOROSMARICINE	Plant				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
22	MYRCENE	Resin, Exudate, Sap				--
0	OCTANE-2,3-DIONE	Resin, Exudate, Sap				--
53	LINALOOL	Resin, Exudate, Sap				--
0	METHYL-ETHER	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
2	SINENSETIN	Plant				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Safron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
2	HISPIDULOSIDE	Plant				--
24	ETHANOL	Resin, Exudate, Sap				--
2	NEO-CHLOROGENIC-ACID	Plant				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
2	ROSMARIDIPHENOL	Leaf				--
0	GENKWANIN-4'-METHYL-ETHER	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
22	BETULINIC-ACID	Leaf				--
24	ETHANOL	Plant				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-SABINENE-HYDRATE	Plant				--
0	CALACORENE	Plant				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	OCTAN-1-OL	Resin, Exudate, Sap				--
0	CAR-4-ENE	Leaf Essent. Oil				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SANTENE	Plant				--
0	ALPHA-FENCHOL	Leaf Essent. Oil				--
7	HISPIDULIN	Plant				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	PICROSALVIN	Plant				Medicinal Plants of China
0	EO	Tissue Culture				--
0	N-METHYL-ROSMARICINE	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	19-ALPHA-HYDROXYURSOLIC-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ROSMARICINE	Shoot				--
0	7-ETHOXY-ROSMANOL	Leaf				--
37	CARVACROL	Plant				--
3	GENKWANIN	Leaf				--
3	BETA-PHELLANDRENE	Leaf Essent. Oil				--
0	VERBENOL	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	ERIODICTIOL	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	ROSMADIOL	Plant				J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
102	CAFFEIC-ACID	Plant				Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	O-O-N-TRIMETHYLROSMARICINE	Plant				--
0	CAR-3-ENE	Resin, Exudate, Sap				--
0	METHYL-JASMONATE	Plant				--
0	SALVIGENIN	Plant				--
0	HEXAN-1-OL	Resin, Exudate, Sap				--
0	ALPHA-FENCHENE	Leaf Essent. Oil				--
20	CARNOSOL	Shoot				Pearson, D. A., Frankel, E. N., Aeschbach, R., German, J. B. 1997. Inhibition of Endothelial Cell-Mediated Oxidation of Low-Density Lipoprotein by Rosemary and Plant Phenolics. J. Agri. & Food Chemistry, 453: 578-582.
23	TERPINEN-4-OL	Resin, Exudate, Sap				--
0	TRICYCLENE	Leaf Essent. Oil				--
0	6-METHOXYLUTEOLIN-7-METHYL-ETHER	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	(Z)-BETA-OCIMENE	Shoot				Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
2	ROSMARIQUINONE	Plant				Stitt, Paul. Why George should eat broccoli.
0	VANILLIC-ACID-4-BETA-D-GLUCOSIDE	Leaf				--
13	BETULIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
22	MYRCENE	Shoot				Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	CADALENE	Plant				Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GAMMA-CADINENE	Plant				--
60	LIMONENE	Resin, Exudate, Sap				--
0	CAR-3-ENE	Leaf Essent. Oil				--
0	SALICYLIC-ACID-2-BETA-D-GLUCOSIDE	Leaf				--
0	CIRSILION	Plant				--
0	HEXAN-1-AL	Resin, Exudate, Sap				--
6	ZINGIBERENE	Resin, Exudate, Sap				--
5	BETA-ELEMENE	Resin, Exudate, Sap				--
3	BETA-PHELLANDRENE	Plant				--
7	DIPENTENE	Essential Oil				--
0	6-METHOXYLUTEOLIN	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	DELTA-4-CARENE	Leaf				--
0	ROSMARINOL	Plant				J.S. Glasby Dict.Plis Containing 2ndary Metabolite. 1991.
77	CHLOROGENIC-ACID	Shoot				--
0	APIGENIN-7-GLUCOSIDE	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.



Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	ISOBUTYL-ACETATE	Plant				Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	BUTAN-2-OL	Resin, Exudate, Sap				--
0	NONAN-2-ONE	Resin, Exudate, Sap				--
8	TRANS-ANETHOLE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
102	CAFFEIC-ACID	Shoot				--
0	4-O-BETA-D-GLUCOSIDE-PROTocatechuic-ACID	Leaf				--
0	PENTAN-2-OL	Resin, Exudate, Sap				--
10	ALPHA-AMYRIN	Plant				--
0	BETA-OCIMENE	Resin, Exudate, Sap				--
34	DIOSMIN	Leaf				--
0	1-OCTEN-3-OL	Plant				--
7	LUTEOLIN-7-GLUCOSIDE	Plant				--
0	6-METHOXY-LUTEOLIN-7-GLUCOSIDE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
3	ALPHA-SELINENE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
11	ALPHA-PHELLANDRENE	Resin, Exudate, Sap				--
9	TERPINOLENE	Resin, Exudate, Sap				--
0	3-METHYL-BUTAN-1-OL	Resin, Exudate, Sap				--
101	APIGENIN	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ISOBORNYL-ACETATE	Plant				Morton, J.F., Major Medicinal Plants. 1977. Atlas of Medicinal Plants of Middle America. Bahamas to Yucatan. 1981.

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROTocatechuic-acid-4-beta-D-glucoside	Leaf				--
0	HEPTANOIC-ACID	Resin, Exudate, Sap				--
0	PENTAN-1-OL	Resin, Exudate, Sap				--
16	P-CYMENE	Resin, Exudate, Sap				--
35	BORNEOL	Resin, Exudate, Sap				--
0	CIS-SABINENE-HYDRATE	Leaf Essent. Oil				--
13	DIOSMETIN	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	LUTEOLIN-3'-O-BETA-D-GLUCURONIDE	Leaf				Phytochemistry, 37: 1463.
77	CHLOROGENIC-ACID	Plant				Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	ALPHA-MUUROLENE	Plant				--
0	6-METHOXY-GENKWANIN	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
8	DELTA-3-CARENE	Shoot				Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
0	TRIMETHYLALKANE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	BETA-CARYOPHYLLENE	Resin, Exudate, Sap				--
0	BORNYLENE	Plant				--
10	NEPETRIN	Plant				--
71	THYMOL	Plant				--
13	ALPHA-TERPINENE	Resin, Exudate, Sap				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	HEPTAN-2-OL	Resin, Exudate, Sap				--
13	BETA-PINENE	Resin, Exudate, Sap				--
0	PENTAN-1-AL	Resin, Exudate, Sap				--
5	VERBENONE	Shoot				Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
5	SABINENE	Resin, Exudate, Sap				--
0	5-HYDROXY-4',7-DIMETHOXYFLAVONE	Plant				Medicinal Plants of China
2	CARNOSIC-ACID	Plant				--
0	TRICYCLENONE	Plant				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	GAMMA-CADINENE	Resin, Exudate, Sap				--
0	BETA-THUJENE	Resin, Exudate, Sap				--
0	EPI-ALPHA-AMYRIN	Plant				Medicinal Plants of China
0	3-BETA-HYDROXYUREA-12,20(30)-DIEN-17-ON-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	SYRINGIC-ACID-4-BETA-D-GLUCOSIDE	Leaf				--
0	PRISTANE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	NEPETIN	Plant				--
0	ALPHA-CARYOPHYLLENE	Resin, Exudate, Sap				--
24	PECTIN	Shoot				--
4	DELTA-TOCOPHEROL	Leaf				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
35	TANNIN	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
0	HEPTAN-1-AL	Resin, Exudate, Sap				--
0	LEDENE	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
17	THUJONE	Resin, Exudate, Sap				--
9	DELTA-CADINENE	Resin, Exudate, Sap				--
0	ALPHA-THUJENE	Leaf Essent. Oil				--
0	MONOMETHYL-ALKANE	Leaf				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
3	STYRENE	Resin, Exudate, Sap				--
0	HYDROXY-BENZOIC-ACID-4-BETA-D-GLUCOSIDE	Leaf				--
35	GERANIOL	Resin, Exudate, Sap				--
41	CAMPHOR	Resin, Exudate, Sap				--
0	ALPHA-FENCHOL	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	P-MENTH-TRANS-2-EN-1-OL	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	BETA-TOCOPHEROL	Leaf				--
0	P-MENTH-CIS-2-EN-1-OL	Leaf Essent. Oil				--
5	SABINENE	Leaf Essent. Oil				--
0	BETA-FENCHENE	Plant				--
78	LUTEOLIN	Plant				--
0	HEPT-TRANS-2-EN-1-AL	Resin, Exudate, Sap				--
9	BETA-AMYRIN	Plant				--
0	DECA-TRANS-2,TRANS-4-DIEN-1-AL	Resin, Exudate, Sap				--

Activities Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ROSMARIDIPHENOL	Plant				Stitt, Paul. Why George should eat broccoli.
1	CAPROIC-ACID	Resin, Exudate, Sap				--
0	OCTAN-3-OL	Resin, Exudate, Sap				--
0	2-BETA-HYDROXYOLEANOLIC-ACID	Plant				List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	SQUALENE	Plant				--
0	HUMULENE-EPOXIDE-II	Plant				CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
26	FLAVONE	Leaf				--
0	ALPHA-FENCHENE	Plant				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.
0	ALPHA-COPACENE	Resin, Exudate, Sap				--
32	ALPHA-TOCOPHEROL	Leaf				--
2	ROSMARIQUINONE	Leaf				--
78	LUTEOLIN	Leaf				Phytochemistry, 37: 1463.
5	SABINENE	Shoot				Soriano Cano, M.C., Sotomayor Sanchez, J.A., Sanchez Gomez, P. and Garcia Vallejo, M.C. 1993. Essential Oils of the Rosmarinus eriocalyx-tomentosus Complex in Southeast Spain. J. Ess. Oil Res. 5: 243-246.
4	GLYCOLIC-ACID	Plant				--
0	P-MENTH-CIS-2-EN-1-OL	Leaf				Duke, J. A. Writeups or information summaries on approximately 2,000 economic plants, USDA, ARS, Beltsville, MD 20705.