

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Origanum vulgare*

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	(E)-2-HEXENAL	Plant	--	--	-0.7427413770332784	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four <i>Origanum vulgare</i> Subspecies of Anatolian Origin. <i>J. Ess. Oil Res.</i> , 5: 425-431.
67	1,8-CINEOLE	Plant	1.5	800	-0.3371100152521458	
67	1,8-CINEOLE	Plant	4	96	-0.534716552086043	Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i>
1	2-CAFFEOYL-OXY-3-{2-(4-HYDROXYBENZYL)-4,5-DIHYDROXY}PHENYLPROPIONIC-ACID	Leaf	21	21		
4	2-UNDECANONE	Plant	6	30	-1	Lawrence, B.M., <i>Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.</i>

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	3-OCTANOL	Plant	2	150	-0.3419992548843729	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	4-(3,4-DIHYDROXY-BENZOYL-OXY-METHYL)-PHENYL-BETA-D-GLUCOPYRANOSIDE	Leaf	--	2330		
3	ALPHA-CADINOL	Plant	20	20	-0.5542331531173925	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
2	ALPHA-HUMULENE	Plant	24	24	-0.5469443141887985	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	ALPHA-HUMULENE	Plant	6	376	2.903829073613269	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	ALPHA-HUMULENE	Shoot Essent. Oil	--	5800	-0.5745433232683291	
15	ALPHA-LINOLENIC-ACID	Plant	4180	4502	-0.43987938539726296	USDA's Ag Handbook 8 and sequelae)
11	ALPHA-PHELLANDRENE	Plant	2	244	0.5309952376954196	
11	ALPHA-PHELLANDRENE	Essential Oil	--	24400	-0.12076327248172064	
11	ALPHA-PHELLANDRENE	Shoot Essent. Oil	--	700	-0.7133860764771591	
28	ALPHA-PINENE	Plant	1	1	-0.4807677514262774	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
28	ALPHA-PINENE	Plant	6	143	-0.3802760745255173	
28	ALPHA-PINENE	Shoot Essent. Oil	8400	8800	-0.3008087496515222	
28	ALPHA-PINENE	Essential Oil	--	14300	-0.43423733371804657	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	ALPHA-TERPINENE	Plant	2	2	-0.4985740128688605	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
13	ALPHA-TERPINENE	Plant	9	178	-0.233349808184638	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	ALPHA-TERPINENE	Shoot Essent. Oil	6200	13700	0.08830474981151562	
23	ALPHA-TERPINEOL	Plant	18	18	-0.4665198749161101	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
23	ALPHA-TERPINEOL	Shoot Essent. Oil	4200	8500	-0.5248906591678238	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	ALPHA-THUJONE	Plant	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
32	ALPHA-TOCOPHEROL	Leaf	--	--		
101	APIGENIN	Plant	--	--		
101	APIGENIN	Leaf	--	--		
3	AROMADENDRIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
3	AROMADENDRIN	Leaf	--	--		
112	ASCORBIC-ACID	Plant	--	--		
6	BETA-BISABOLENE	Plant	45	45	-0.4883699141484162	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
6	BETA-BISABOLENE	Plant	3	640	1.7448406109922843	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	BETA-BISABOLENE	Essential Oil	--	38100	1	
6	BETA-BISABOLENE	Shoot Essent. Oil	--	1500	-1	
53	BETA-CAROTENE	Plant	41	45	-0.48346418761085247	USDA's Ag Handbook 8 and sequelae)
5	BETA-ELEMENE	Plant	6	30	-0.3646462028448172	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	BETA-ELEMENE	Shoot Essent. Oil	--	1100	-0.7456415586325718	
13	BETA-EUDES MOL	Shoot Essent. Oil	--	8600	1	
13	BETA-IONONE	Plant	3	3	-0.44307902049736897	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	BETA-PHELLANDRENE	Plant	5	5	-0.7791779018578511	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
3	BETA-PHELLANDRENE	Plant	12	60	-0.2540957154032198	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	BETA-PHELLANDRENE	Shoot Essent. Oil	--	800	-1	
13	BETA-PINENE	Plant	2.5	2.5	-0.4327872744923022	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	BETA-PINENE	Plant	1	312	-0.0986095230981471	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	BETA-PINENE	Shoot Essent. Oil	800	1100	-1.4350496146801597	
13	BETA-PINENE	Essential Oil	--	12900	-0.44394963816922256	
5	BETA-SESQUIPHELLANDRENE	Plant	1	1	-0.7517309741553299	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
47	BETA-SITOSTEROL	Plant	--	1770	2.5234864995607373	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
35	BORNEOL	Plant	32	252	-0.4432092009055521	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
35	BORNEOL	Shoot Essent. Oil	--	14100	-0.6239581251643059	
12	BORNYL-ACETATE	Plant	11	11	-0.4619671542050679	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
4	BORON	Plant	21	41	-0.3966910854291177	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).
102	CAFFEIC-ACID	Leaf	106	1060	-0.568873034612085	
102	CAFFEIC-ACID	Plant	6000	6000	-0.13697781925712094	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
102	CAFFEIC-ACID	Shoot	--	--		
28	CALCIUM	Plant	14070	18794	0.5567192219235987	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	CAMPESTEROL	Plant	120	130	-0.044215768828538185	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
9	CAMPHENE	Plant	0.5	0.5	-0.6049690826062011	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
9	CAMPHENE	Plant	1	64	-0.49634722501068135	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	CAMPHENE	Shoot Essent. Oil	1500	10500	-0.15055766984407706	
9	CAMPHENE	Essential Oil	--	5100	-0.5406818421827995	
41	CAMPHOR	Plant	--	40	-0.6336247664182881	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	CAPRIC-ACID	Plant	400	431	-0.2764618693305909	USDA's Ag Handbook 8 and sequelae)
37	CARVACROL	Plant	1.5	640	-0.4517436697504344	
37	CARVACROL	Plant	6	640	-0.7782520185838981	
37	CARVACROL	Essential Oil	136300	140000	-0.4821315368660316	
37	CARVACROL	Flower Essent. Oil	--	--		
37	CARVACROL	Shoot	--	--		
37	CARVACROL	Shoot Essent. Oil	6000	795800	1.414118386709685	
19	CARVONE	Plant	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
31	CARYOPHYLLENE	Plant	1	920	0.6425817485297227	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
6	CARYOPHYLLENE-EPOXIDE	Shoot Essent. Oil	--	10400		
8	CARYOPHYLLENE-OXIDE	Plant	84	336	0.21706461981273312	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	CATECHOL	Plant	--	--		
77	CHLOROGENIC-ACID	Plant	--	--		
77	CHLOROGENIC-ACID	Shoot	--	--		
18	CINNAMIC-ACID	Plant	--	--		
3	CIS-OCIMENE	Plant	270	1392	4.103231707920077	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
12	COPPER	Plant	9	9	-0.5555522679388898	USDA's Ag Handbook 8 and sequelae)
4	COSMOSIIN	Plant	--	--		
4	COSMOSIIN	Shoot	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
3	DECANOIC-ACID	Plant	10	10	1	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
2	DECANOL	Plant	0.4	0.4	-0.8582741584791299	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
8	DELTA-3-CARENE	Plant	2	96	-0.31593409754470814	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	DELTA-3-CARENE	Plant	2	96	-0.31593409754470814	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	DELTA-CADINENE	Plant	2	480	2.8666601149123703	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	DELTA-CADINENE	Plant	2	480	2.8666601149123703	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	DELTA-CADINOL	Plant	2.5	2.5	-1.3587324409735149	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four <i>Origanum vulgare</i> Subspecies of Anatolian Origin. <i>J. Ess. Oil Res.</i> , 5: 425-431.
4	DELTA-TOCOPHEROL	Leaf	--	--		
13	DIOSMETIN	Plant	--	--		Leung, A.Y., <i>Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics</i> , John Wiley & Sons, New York, 1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	DIPENTENE	Plant	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
2	ELEMOL	Plant	1.5	1.5	-0.6325464186326382	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
10	ERIODICTYOL	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
10	ERIODICTYOL	Leaf	--	--		
12	ESTRAGOLE	Plant	210	1400	-0.7156213996619503	
76	EUGENOL	Shoot	--	--		
15	FIBER	Plant	109900	203870	-0.1400037252309733	USDA's Ag Handbook 8 and sequelae)
13	GALANGIN	Leaf	--	--		
62	GALLIC-ACID	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
11	GAMMA-TERPINENE	Plant	4	4	-0.5323342516104616	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
11	GAMMA-TERPINENE	Plant	1	1476	0.06631233177026918	
11	GAMMA-TERPINENE	Essential Oil	--	147600	1.1933408108948367	
11	GAMMA-TERPINENE	Shoot Essent. Oil	20700	46100	1	
14	GAMMA-TOCOPHEROL	Leaf	--	--		
35	GERANIOL	Plant	1.5	1.5	-0.4494030123572502	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

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35	GERANIOL	Plant	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	GERANYL-ACETATE	Plant	11	11	-0.554267928044265	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
5	GERANYL-ACETATE	Plant	1	96	-0.4518364834364953	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	GERMACRENE-D	Plant	140	140	-0.30357689608063043	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	GERMACRENE-D	Plant	190	1192	0.5829825591736422	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	GERMACRENE-D	Shoot Essent. Oil	--	74500	1.1645401955263854	
5	HEXANAL	Plant	1	1	-0.6871913303838042	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
7	INDOLE-3-ACETIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
6	IRON	Plant	325	598	-0.03407679020279113	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	ISOBORNEOL	Plant	2.5	2.5	-0.894912395678989	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
7	ISOBORNEOL	Shoot Essent. Oil	--	900		
4	ISOVITEXIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
75	KAEMPFEROL	Plant	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
7	LAURIC-ACID	Plant	200	215	-0.6690422326541493	USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
60	LIMONENE	Plant	5	5	-0.48273096170084684	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
60	LIMONENE	Plant	22	480	-0.1908021443610227	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
60	LIMONENE	Shoot Essent. Oil	1400	35900	-0.5603926539497507	
53	LINALOOL	Plant	1	600	-0.5831468046531204	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
53	LINALOOL	Essential Oil	--	380000	1.1206957921050447	
53	LINALOOL	Shoot Essent. Oil	1200	238100	1.0345888637999787	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
7	LINALYL-ACETATE	Plant	15	15	-0.5708548843075443	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
7	LINALYL-ACETATE	Plant	8	184	-0.4895856250986523	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
27	LINOLEIC-ACID	Plant	1050	1131	-0.564956755492135	USDA's Ag Handbook 8 and sequelae)
78	LUTEOLIN	Plant	--	--		
65	MAGNESIUM	Plant	2600	3016	-0.32604672316035793	USDA's Ag Handbook 8 and sequelae)
14	MANGANESE	Plant	47	47	-0.35804718798312823	USDA's Ag Handbook 8 and sequelae)

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
22	MYRCENE	Plant	6	6	-0.46951072518303016	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
22	MYRCENE	Plant	8	180	-0.2783445471513297	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
22	MYRCENE	Shoot Essent. Oil	6100	180900	1.994589844972855	
6	MYRISTIC-ACID	Plant	1700	1831	1.0783683009274008	USDA's Ag Handbook 8 and sequelae)
56	NARINGENIN	Plant	--	--		
12	NARINGIN	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
10	NEROL	Plant	0.6	0.6	-0.4417541258507886	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
5	NERYL-ACETATE	Plant	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
39	NIACIN	Plant	62	67	-0.13615426841321743	USDA's Ag Handbook 8 and sequelae)
2	NONANOIC-ACID	Plant	0.9	0.9	0.9999999999999994	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
4	O-COUMARIC-ACID	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	OCIMENE	Plant	24	96	-0.666393441279549	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
64	OLEANOLIC-ACID	Plant	--	--		
18	OLEIC-ACID	Plant	5100	5493	0.19350807817259624	USDA's Ag Handbook 8 and sequelae)
4	ORIENTIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
25	P-COUMARIC-ACID	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
25	P-COUMARIC-ACID	Leaf	--	--		
16	P-CYMENE	Plant	1	1	-0.4199947603342857	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
16	P-CYMENE	Plant	3	3237	0.4223771875798914	
16	P-CYMENE	Essential Oil	--	323700	2.039071513364566	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
16	P-CYMENE	Shoot Essent. Oil	23500	87600	0.5086342176670718	
13	P-HYDROXY-BENZOIC-ACID	Plant	--	--		
13	PALMITIC-ACID	Plant	17000	18309	0.11442945147299585	USDA's Ag Handbook 8 and sequelae)
2	PALMITOLEIC-ACID	Plant	1600	1723	1	USDA's Ag Handbook 8 and sequelae)
3	PEONIDIN	Plant	--	--		
4	PHOSPHORUS	Plant	1769	2402	-0.5702325611066069	USDA's Ag Handbook 8 and sequelae)
2	PHYTOSTEROLS	Plant	2030	2186	1.7096618162343489	USDA's Ag Handbook 8 and sequelae)
14	POTASSIUM	Plant	16066	18647	-0.2196942633137666	USDA's Ag Handbook 8 and sequelae)
43	PROTOCATECHUIC-ACID	Leaf	132	132	1.3991646855290003	
43	PROTOCATECHUIC-ACID	Plant	--	--		
176	QUERCETIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
176	QUERCETIN	Leaf	--	--		
2	RETUSIN	Plant	--	--		
57	ROSMARINIC-ACID	Leaf	790	790	-0.9051861208964801	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
57	ROSMARINIC-ACID	Plant	4000	16600	1.6190585490559364	
57	ROSMARINIC-ACID	Plant	--	55000	1.6190585490559364	Fitoterapia No.62: 166.
57	ROSMARINIC-ACID	Shoot	16600	50000	1.4915919255653871	
57	ROSMARINIC-ACID	Inflorescence	--	68000	1.3995879181949649	
87	RUTIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
5	SABINENE	Plant	50	2096	1.0689929276284884	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	SABINENE	Plant	50	2096	1.0689929276284884	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	SABINENE	Shoot Essent. Oil	400	14700	1.4105109675702203	
1	SELINENE	Plant	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
1	SODIUM	Plant	109	205	-0.2927300206668179	USDA's Ag Handbook 8 and sequelae)
1	STACHYOSE	Plant	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
1	STACHYOSE	Seed	--	--		
8	STEARIC-ACID	Plant	5800	6247	1.7106077122414611	USDA's Ag Handbook 8 and sequelae)
12	STIGMASTEROL	Plant	--	150	-0.23746415616613933	Spiller, G. A. 1996 (Spiller, G. A. Ed. 1996. CRC Handbook of Lipids in Human Nutrition. CRC Press. Boca Raton, FL. 233 pp.)
6	SYRINGIC-ACID	Plant	--	--		
17	TAXIFOLIN	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	TERPINEN-4-OL	Plant	--	--	-0.28148831286535375	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
23	TERPINEN-4-OL	Plant	17	390	-0.11158822507826323	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
23	TERPINEN-4-OL	Essential Oil	--	20000	-0.42280878270320754	
23	TERPINEN-4-OL	Shoot Essent. Oil	--	44800	-0.639953869859281	
9	TERPINOLENE	Plant	1	1	-0.7291018522032187	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	TERPINOLENE	Plant	2	16	-0.596698368146944	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
9	TERPINOLENE	Shoot Essent. Oil	--	5500	1	
5	TERPINYL-ACETATE	Plant	54	216	0.5492918772884068	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
31	THIAMIN	Plant	3	4	-0.3059929673424499	USDA's Ag Handbook 8 and sequelae)
71	THYMOL	Plant	--	--	-0.5754212594013255	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
71	THYMOL	Plant	2	5000	0.04270754963070453	
71	THYMOL	Essential Oil	121200	500000	0.8605172376756699	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
71	THYMOL	Shoot Essent. Oil	11100	24500	-0.1340249267792265	
71	THYMOL	Flower Essent. Oil	--	--		
71	THYMOL	Shoot	--	--		
2	TORREYOL	Plant	6	6	-0.4877131100041325	Sezik, E., Tumen, G., Kirimer, N., Ozek, T., and Baser, K.H.C. 1993. Essential Oil Composition of Four Origanum vulgare Subspecies of Anatolian Origin. J. Ess. Oil Res., 5: 425-431.
8	TRANS-ANETHOLE	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
1	TRANS-CARVEOL	Shoot Essent. Oil	--	1000		
89	URSOLIC-ACID	Plant	3100	3100	-0.6475484428977467	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
24	VANILLIC-ACID	Plant	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
18	VITEXIN	Plant	--	--		Stitt, Paul. Why George should eat broccoli.
77	ZINC	Plant	39	49	-0.031006570554655437	USDA's Ag Handbook 8 and sequelae)