

Table S1. Composition of the cuticular waxes of cork oak leaves solubilised in n-hexane with different extraction times as determined by GC-MS, in % of total peak area.

Wax constituent (% total peak area)	Extraction time				
	5 min	1 h	2 h	3 h	6 h
n-Alkanes					
Tetradecane (C ₁₄)	-	0.06	-	-	-
Hexadecane (C ₁₆)	-	0.11	-	-	-
2,6,10-Trimethyl tetradecane (C ₁₇)	-	0.08	0.03	0.06	-
6-Methyl octadecane (C ₁₉)	-	0.11	-	-	-
Nonadecane (C ₁₉)	-	0.05	0.01	-	0.1
Docosane (C ₂₂)	-	0.03	0.01	-	-
Tricosane (C ₂₃)	-	0.03	-	-	-
Tetracosane (C ₂₄)	-	0.02	-	-	-
Pentacosane (C ₂₅)	-	0.04	0.03	0.05	0.05
Hexacosane (C ₂₆)	-	0.03	0.02	-	-
Heptacosane (C ₂₇)	-	0.49	0.39	1.12	1.02
1-Nonacosene (C ₂₉)	-	0.13	0.1	0.04	0.1
Nonacosane (C ₂₉)	0.17	0.21	0.02	0.13	0.14
Triacotane (C ₃₀)	-	5.1	2.47	4.89	4.66
Hentriacotane (C ₃₁)	0.07	0.42	0.37	0.65	0.56
n-Alkanols					
Butane-2,3-diol C ₄ H ₁₀ O ₂	-	0.23	-	-	0.58
Butane-1,2,3-triol (C ₄ H ₁₀ O ₃)	-	0.12	-	-	0.09
2-Undecen-1-ol (E)-(C ₁₁ H ₂₂ O)	-	0.24	0.02	0.04	0.03
Hexadecan-1-ol (C ₁₆ OH)	-	1.15	0.15	0.24	0.23
Heptadecan-1-ol (C ₁₇ OH)	-	0.64	-	-	0.74
Octadecan-1-ol (C ₁₈ OH)	-	0.12	0.01	0.05	0.04
Eicosan-1-ol (C ₂₀ OH)	-	0.09	-	-	0.02
Docosan-1-ol (C ₂₂ OH)	1.24	-	0.61	-	0.7
Tricosan-1-ol (C ₂₃ OH)	0.02	0.01	0.02	0.03	0.03
Tetracosan-1-ol (C ₂₄ OH)	96.67	2.91	3.11	3.05	4.34
Pentacosan-1-ol (C ₂₅ OH)	0.02	-	-	0.02	0.02
Hexacosan-1-ol (C ₂₆ OH)	0.45	0.03	0.04	0.05	0.08
Octacosan-1-ol (C ₂₈ OH))	-	-	0.08	0.26	0.11
Fatty acids					
Saturated					
Heptanoic acid (C _{7:0})	-	0.64	0.26	0.09	-
Octanoic acid (C _{8:0})	-	0.44	0.03	0.38	0.05
Nonanoic (C _{9:0})	-	0.85	0.05	0.06	0.07
Tetradecanoic acid (C _{14:0})	-	0.09	0.04	0.03	0.05
Pentadecanoic acid (C _{15:0})	-	0.03	0.03	0.05	0.04
Hexadecanoic acid (C _{16:0})	-	7.57	5.35	5.57	5.32
Heptadecanoic acid (C _{17:0})	-	0.02	0.03	0.04	0.04
Octadecanoic acid (C _{18:0})	-	0.43	0.38	0.43	0.4
Eicosanoic acid (C _{20:0})	-	0.2	0.23	0.04	0.3
Docosanoic acid (C _{22:0})	-	0.11	0.12	0.24	0.22
Tetracosanoic acid (C _{24:0})	0.17	0.11	-	0.38	0.37
Hexacosanoic acid (C _{26:0})	0.01	0.14	0.22	0.9	1.05
Octacosanoic acid (C _{28:0})	-	0.57	0.76	2.61	3.39
Triacotanoic acid (C _{30:0})	-	0.29	0.32	1.08	1.37
Unsaturated					
9-cis-Hexadecenoic acid (C _{16:1})	-	0.05	0.08	0.11	0.11
9-Octadecenoic acid (C _{18:1})	-	0.03	-	-	-
9,12-Octadecadienoic acid (C _{18:2})	-	-	0.84	1.12	0.81
9,12,15-Octadecatrienoic acid (C _{18:3})	-	-	2.28	3.43	2.11
Docosahexaenoic acid (C _{22:6})	-	-	-	0.04	-
Diacids					
Butanedioic acid (C _{4:0})	-	-	-	-	0.17
Nonanedioic acid (C _{9:0})	-	0.06	0.01	0.01	-
2-Butenedioic acid (C _{4:1})	-	0.21	-	-	0.22
Hydroxyacids					
2-Hydroxyoctanoic acid (C _{8:0})	-	-	0	0.02	-
Glycerides					

3-Hydroxypropyl hexadecanoate	-	0.02	-	0.04	0.11
Glycerol	-	-	-	0.07	-
1-Linolenoylglycerol	-	-	0.03	0.09	-
2-Monostearin	-	-	0.02	0.17	0.07
Monopalmitin	-	0.1	0.11	0.15	0.08
Monolinolenin	-	-	0.04	0.09	0.03
Sterols					
δ-Tocopherol	-	-	0.23	0.35	0.18
Stigmasterol	-	-	0.05	0.06	-
β-Sistoterol	-	-	2.82	3.5	2.5
25-Hydroxycholesterol	-	-	0.07	0.16	-
Cholest-5-en-3-ol, (3α)	-	0.01	0.05	0.08	-
Terpenes					
Diterpenes					
Phytol	-	-	0.12	0.21	0.16
Ginkgolide-B	-	0.22	-	-	-
Pentacyclic triterpenes					
α-Amyrin	0.01	0.68	0.79	0.77	0.74
β-Amyrin	0.02	3.02	2.83	3.11	2.47
Erythrodiol (α-Amyrin)	-	-	0.11	0.12	0.13
Germanicol	0.01	11.19	17.31	7.49	6
Lupeol	0.07	43.93	40.43	37.76	33.04
Betulin	-	0.46	0.9	1.12	0.97
Betulinic acid	-	0.05	0.56	0.74	0.56
Oleanolic acid	-	0.08	0.29	0.46	0.41
Ursolic acid	-	0.06	0.09	0.14	0.13
Corosolic acid	-	-	-	0.04	-
Aromatic compounds					
Benzoic acid	0.01	0.22	0.12	0.13	0.45
4-Hydroxybenzaldehyde	-	0.11	-	-	-
4-Hydroxybenzoic acid	-	-	-	0.05	-
Vanillin acid	-	-	-	0.01	-
1,2-Benzenedicarboxylic acid	-	0.16	0.05	0.12	-
1,2-Benzenedicarboxylic acid, butyl 8-methylnonyl ester	-	0.05	0.15	-	0-
Hexadecy-(E)-p-coumarate	-	0.56	1.74	2.32	1.63
Hexadecy-(E)-p-coumarate (Isomer)	-	0.56	2.47	3	2.03
Phenethyl icosanoate	-	1.66	4.54	5.63	4.11
Others compounds					
4,8,12,16-Tetramethylheptadecan-4-olide	-	0.17	0.09	0.13	-
(15R)-15-methyl prostaglandin E2 methyl ester	-	-	0.07	0.09	-
Ethylene glycol	-	0.58	0.59	0.07	-
Acetic acid	-	0.22	-	-	-
7,9-Di-tert-butyl-1-oxaspiro[4.5]deca-6,9-diene-2,8-dione	-	0.21	0.06	-	0.06
2-Pentadecanone, 6,10,14-trimethyl	-	0.34	0.06	0.08	0.09
Phenethyl icosanoate	-	0.08	0.06	0.14	0.1
Total identified	98.0	87.37	90.72	89.96	81.52

Table S2. Composition of the cuticular waxes of cork oak leaves solubilised in dichloromethane with different extraction times as determined by GC-MS, in % of total peak area.

Wax constituent (% total peak area)	Extraction time				
	5 min	1 h	2 h	3 h	6 h
n-Alkanes					
Nonadecane (C ₁₉)	0.02	-	-	-	0.06
Heptacosane (C ₂₇)	-	0.41	0.44	0.29	0.57
Octacosane (C ₂₈)	0.01	0.09	0.07	0.08	0.04
1-Nonacosene (C ₂₉)	-	0.07	0.09	0.07	0.09
Nonacosane (C ₂₉)	0.28	2.53	2.18	1.47	2.56
Triacontane (C ₃₀)	-	0.34	0.3	0.25	0.33
Hentriacontane (C ₃₁)	0.11	-	-	-	-
n-Alkanols					
Butane-1,2,3-triol C ₄ H ₁₀ O ₃)	-	0.39	0.58	0.47	0.20
Hexadecan-1-ol (C ₁₆ OH)	-	0.25	0.22	0.24	0.21
Octadecan-1-ol (C ₁₈ OH)	-	0.04	0.05	0.05	0.04
Eicosan-1-ol (C ₂₀ OH)	0.01	-	-	-	0.01
2-Octyldodecanol C ₂₀ H ₄₂ O	-	-	0.36	0.02	0.01
Docosan-1-ol (C ₂₂ OH)	2.37	0.77	1.12	1.10	1.85
Tricosan-1-ol (C ₂₃ OH)	0.03	0.02	0.03	0.03	0.07
Tetracosan-1-ol (C ₂₄ OH)	92.12	3.47	4.59	3.31	4.62
Pentacosan-1-ol (C ₂₅ OH)	0.02	-	-	-	0.03
Hexacosan-1-ol (C ₂₆ OH)	0.90	0.04	0.05	0.04	0.16
Octacosan-1-ol (C ₂₈ OH))	-	0.11	0.31	0.26	0.06
Fatty acids					
Saturated					
Hexenoic acid (C _{6:0})	-	0.08	0.11	0.14	0.13
Octanoic acid (C _{8:0})	-	0.17	0.03	0.05	0.06
Nonanoic (C _{9:0})	-	0.08	0.06	-	-
Decanoic acid (C _{10:0})	0.01	-	-	-	-
Tetradecanoic acid (C _{14:0})	-	0.03	0.06	0.09	0.05
Hexadecanoic acid (C _{16:0})	0.07	7.6	9.84	9.71	9.68
Heptadecanoic acid (C _{17:0})	-	0.03	0.06	0.08	0.03
Octadecanoic acid (C _{18:0})	0.02	0.32	0.59	0.73	0.42
Eicosanoic acid (C _{20:0})	0.01	0.24	0.42	0.46	0.28
Docosanoic acid (C _{22:0})	0.05	0.19	0.32	0.28	0.24
Tetracosanoic acid (C _{24:0})	0.47	-	0.41	0.28	0.41
Hexacosanoic acid (C _{26:0})	0.04	0.55	0.94	0.44	0.95
Octacosanoic acid (C _{28:0})	0.04	1.6	2.31	1.14	2.49
Triacontanoic acid (C _{30:0})	0.02	0.58	0.67	0.39	0.74
Unsaturated					
9-cis-Hexadecenoic acid (C _{16:1})	-	0.18	0.25	0.29	0.15
9,12-Octadecadienoic acid (C _{18:2})	-	0.14	1.73	2.38	0.75
9,12,15-Octadecatrienoic acid (C _{18:3})	-	0.39	6.43	8.04	2.69
Docosahexaenoic acid (C _{22:6})	-	0.03	0.23	0.34	0.13
Diacids					
Butanedioic acid (C _{4:0})	-	0.32	0.3	0.07	0.61
Nonanedioic acid (C _{9:0})	-	0.06	0.07	0.1	0.05
Dodec-2-enedioic acid (C _{12:1})	-	0.02	0.08	0.1	0.05
Hydroxyacids					
2-Hydroxyoctanoic acid (C _{8:0})	-	0.03	0.08	0.14	0.04
Glycerides					
Glycerol	-	0.95	2.14	0.51	-
2-Monostearin	-	0.02	0.04	0.03	0.03
Monopalmitin	-	0.15	0.24	0.22	0.23
Monolinolenin	-	0.02	0.17	0.2	0.1
1-Linolenoylglycerol	-	0.02	0.32	0.38	0.19
Sterols					
δ-Tocopherol	0.07	0.19	0.19	0.05	0.07
Stigmasterol	0.06	0.09	0.11	0.11	0.06
β-Sistotol	1.59	2.55	2.33	3.24	1.59
25-Hydroxycholesterol	0.24	0.12	0.1	0.04	0.24
Terpenes					

Diterpenes					
Phytol	-	0.02	0.4	0.25	0.14
Pentacyclic triterpenes					
α -Amyrin	0.06	0.8	0.66	0.84	0.58
β -Amyrin	0.13	2.75	2.29	2.56	2.11
Erythrodiol (a-Amyrin)		0.09	0.14	0.2	0.07
Germanicol	0.14	9.15	5.46	6.46	4.77
Lupeol	1.61	45.44	31.56	35.28	35.37
Betulin	-	0.52	0.64	0.91	0.55
Betulinic acid	-	0.28	0.46	0.61	0.35
Oleanolic acid	-	0.44	0.57	0.62	0.45
Ursolic acid	0.01	0.3	0.33	0.39	0.21
Corosolic acid	-	0.1	0.18	0.23	0.16
Aromatic compounds					
Benzoic acid	-	0.27	0.21	0.37	0.32
4-Hydroxybenzaldehyde	-	0.09	-	-	-
Vanillin acid	-	0.11	0.1	0.11	0.1
Hexadecy-(E)-p-coumarate	0.59	4.27	5.31	5.19	4.09
Sugars					
Levoglucozan	-	-	-	-	0.42
Fructofuranose	-	0.09	0.54	1.43	0.18
Others compounds					
4,8,12,16-Tetramethylheptadecan-4-olide	-	0.11	0.12	0.04	0.14
(15R)-15-methyl prostaglandin E2 methyl ester	-	0.08	0.27	0.4	0.15
Lactic acid	0.16	-	-	-	-
3-Hydroxypropyl hexadecanoate	-	0.02	0.04	0.01	0.05
2-(2-Butoxyethoxy) ethoxy	-	0.07	0.06	0.57	-
Erythrono-1,4-lactone, (E)-	-	0.49	-	0.12	0.5
2(4H)-Benzofuranone, 5,6,7,7a-tetrahydro-4,4,7a-trimethyl	-	0.09	0.02	0.06	0.1
L-Lyxonic acid 1,4-lactone	-	0.06	0.06	-	0.05
Total identified	99.45	89.93	90.66	93.65	85.64

Table S3. Composition of the cuticular waxes of cork oak leaves solubilised in acetone with different extraction times as determined by GC-MS, in % of total peak area.

Wax constituent (% total peak area)	Extraction time				
	5 min	1 h	2 h	3 h	6 h
n-Alkanes					
6-Methyl octadecane (C ₁₉)	-	0.01	0.36	0.01	-
Nonadecane (C ₁₉)	-	-	-	0.04	-
Eicosane (C ₂₀)	-	-	0.76	-	-
Heneicosane (C ₂₁)	-	-	-	-	-
Docosane (C ₂₂)	-	-	0.25	-	-
Heptacosane (C ₂₇)	-	0.16	0.21	0.06	0.08
Octacosane (C ₂₈)	-	-	-	0.13	-
1-Nonacosene (C ₂₉)	-	-	0.22	-	-
Nonacosane (C ₂₉)	-	0.26	-	0.13	0.14
Triacontane (C ₃₀)	-	0.04	-	-	-
n-Alkanols					
Butane-1,2,3-triol (C ₄ OH)	1.85	0.24	-	0.24	0.17
5-Hexen-1-ol (C ₆ OH)	-	-	0.11	-	-
2-Undecen-1-ol, (E)- C ₁₁ OH)	-	0.04	0.21	0.25	-
Hexadecan-1-ol (C ₁₆ OH)	-	0.11	0.16	0.1	0.09
Octadecan-1-ol (C ₁₈ OH)	-	0.06	-	0.03	0.04
Docosan-1-ol (C ₂₂ OH)	-	0.01	-	0.7	0.39
Tricosan-1-ol (C ₂₃ OH)	-	0.04	-	0.04	0.03
Tetracosan-1-ol (C ₂₄ OH)	0.28	3.22	3.21	2.74	1.28
Hexacosan-1-ol (C ₂₆ OH)	-	0.03	-	0.02	0.02
Octacosan-1-ol (C ₂₈ OH))	-	0.02	-	0.05	-
Fatty acids					
Saturated					
Hexenoic acid (C _{6:0})	-	-	-	0.12	0.06
Octanoic acid (C _{8:0})	-	0.06	0.09	0.03	0.04
Tetradecanoic acid (C _{14:0})	-	-	0.33	-	-
Pentadecanoic acid (C _{15:0})	-	0.34	0.28	-	-
Hexadecanoic acid (C _{16:0})	-	2.51	5.54	5.92	4.35
Heptadecanoic acid (C _{17:0})	-	-	-	0.04	0.02
Octadecanoic acid (C _{18:0})	-	0.15	0.91	0.46	0.28
Eicosanoic acid (C _{20:0})	-	0.09	-	0.17	0.14
Docosanoic acid (C _{22:0})	-	0.11	0.12	0.14	0.1
Tetracosanoic acid (C _{24:0})	-	-	0.29	0.14	0.08
Hexacosanoic acid (C _{26:0})	-	0.27	0.22	0.17	0.09
Octacosanoic acid (C _{28:0})	-	0.51	0.87	0.26	0.14
Triacontanoic acid (C _{30:0})	-	0.14	0.37	0.06	0.05
Unsaturated					
9-cis-Hexadecenoic acid (C _{16:1})	-	0.07	-	0.2	0.12
9,12-Octadecadienoic acid (C _{18:2})	-	0.03	0.66	1.23	0.48
9,12,15-Octadecatrienoic acid (C _{18:3})	-	0.07	0.61	0.07	1.26
Docosahexaenoic acid (C _{22:6})	-	0.02	0.21	-	-
Diacids					
Butanedioic acid (C _{4:0})	0.13	-	0.95	0.99	2.45
Nonanedioic acid (C _{9:0})	-	-	0.04	0.1	0.05
2-Butenedioic acid (C _{4:1})	-	-	-	-	0.07
Dodec-2-enedioic acid (C _{12:1})	-	-	-	-	0.11
Hydroxyacids					
2-Hydroxyoctanoic acid (C _{8:0})	-	0.02	-	0.008	-
Glycerides					
Glycerol	-	1.04	1.72	1.36	0.95
2-Palmitoylglycerol	-	-	-	0.02	-
2,3-Dihydroxypropyl icosanoate	-	0.02	-	0.05	0.02
Monopalmitin	-	0.06	-	0.16	0.11
Monolinolenin	-	-	0.22	0.24	0.08
Sterols					
δ-Tocopherol	-	-	-	0.09	0.04
Stigmasterol	-	0.72	0.53	0.05	0.05
β-Sistoterol	-	0.32	0.99	1.43	1.15

Cholest-5-en-3-ol, (3 α)	-	-	-	0.04	-
Terpenes					
Diterpenes					
Phytol	-	0.01	-	0.18	0.05
Pentacyclic triterpenes					
α -Amyrin	-	0.28	0.49	0.3	0.33
β -Amyrin	-	0.72	-	1.18	1.19
Erythrodilol (a-Amyrin)	-	0.03	-	0.05	-
Germanicol	-	2.89	2.05	2.71	2.86
Lupeol	0.01	14.53	16.25	14.71	16.15
Betulin	-	0.19	0.39	0.35	0.42
Betulinic acid	-	0.18	-	0.23	0.29
Oleanolic acid	-	0.26	0.4	0.35	0.37
Ursolic acid	-	0.25	0.29	0.29	0.33
Corosolic acid	-	0.11	0.38	0.18	0.16
Aromatic compounds					
Benzoic acid	-	0.91	0.83	0.17	0.14
4-methyl-2-(4-phenylphenyl)pentan-2-ol	0.26	-	-	-	-
Cathechine	13.18	0.02	-	0.05	0.04
Epigallocatechin	0.04	-	-	-	-
4-Hydroxybenzaldehyde	-	-	0.19	0.03	0.1
4-Hydroxybenzoic acid	-	0.06	0.32	-	-
Vanillin acid	-	0.14	0.28	0.02	0.03
1,2-Benzenedicarboxylic acid, butyl 8-methylnonyl ester	-	0.11	-	-	-
Hexadecy-(E)-p-coumarate	0.01	1.67	1.62	2.35	2.42
Sugars					
D-(+)-Ribono-1,4-lactone (isomer)	-	0.07	-	-	-
D-(+)-Ribono-1,4-lactone (isomer)	-	-	-	-	0.06
Levoglucozan	-	0.18	0.28	0.45	0.22
Myo Inositol	19.97	-	15.06	-	-
Scyllo Inositol	-	15.44	14.27	12.39	14.88
Deoxinositol	-	6.28	1.81	5.24	6.3
D-(-)-Fructofuranose (isomer)	0.24	3.02	0.94	1.61	1.83
D-Fructose	-	12.45	10.33	9.07	6.78
D-Ribose	-	0.97	0.55	0.49	0.56
Scyllo-Inositol	-	-	0.28	-	0.11
(α / β) D-Glucopyranose (isomer)	0.46	8.64	6.28	5.62	7.96
β -D-(+)-Mannopyranose	0.36	0.81	-	0.35	0.6
(α / β) D-Glucopyranose (isomer)	-	8.42	-	5.47	6.98
(α / β) Ethyl α -D-glucopyranoside (isomer)	-	-	-	0.05	0.03
(α / β) Ethyl -D-glucopyranoside (isomer)	-	0.05	-	0.04	0.04
Sucrose	18.17	0.48	0.21	0.47	0.4
Others compounds					
4,8,12,16-Tetramethylheptadecan-4-olide	-	0.04	-	0.05	-
(15R)-15-methyl prostaglandin E2 methyl ester	-	0.04	-	-	-
Lactic acid	0.04	-	-	-	-
Ethylene glycol	-	0.28	0.22	0.32	-
Glyceric acid	-	-	0.13	0.15	0.13
3-Hydroxisocaproic acid	-	-	-	0.21	-
Malic acid	-	0.36	0.11	1.02	0.65
2-Pentadecanone, 6,10,14-trimethyl	-	-	-	-	-
3-Hydroxypropyl palmitate	-	0.01	-	0.02	0.02
Glycyl-L-Valine	-	0.18	-	0.13	-
2(3H)-Furanone, dihydro-3,4-bis[(trimethylsilyloxy]-, trans-	-	0.36	0.19	0.64	0.25
Docosyl octyl ether	-	0.04	-	0.04	-
Quininic acid	39.18	4.6	0.94	7.2	7.15
Shikimic acid, 4TMS derivative	5.03	-	-	-	-
2,3,4-Trihydroxybutyric acid	-	0.24	0.09	0.15	0.22
Total identified	99.84	93.35	92.03	89.7	91.57