KI apolar Lett	KI apolar	Constituents	*J. macrocarpa	A. maritima	L. officinalis	Myrtus	C limon var. pompia	S. insularis	T. capitatus	°Helich 1	°Helich 2	°Helich 3	°Helich 4	[a]ID
800	801	octane					0.04							RI, MS
909	907	santolina triene		0.47				9.32						RI, MS
927	927	tricyclene	0.12	0.43	0.48									Std
930	929	artemisia triene		1.11										RI, MS
930	932	α-thujene	0.04			0.94		0.45	3.78					Std
939	937	α-pinene	77.63	0.74		52.72	0.38	0.75	1.51	0.25	0.33	0.42		Std
953	954	α-fenchene								0.04	0.35	0.16		Std
954	954	~~(+)~~ camphene	0.2	5.47	0.35				0.33			0.05		Std
1003	954	α-phellandrene				1.65								Std
[1] 960	957	thuja-2,4(10)-diene					0.1							**RI, MS Adams et al., 2005**
960	961	benzaldehyde	0.18											Std
975	973	*Trans*-pinane							0.09					RI, MS
975	975	sabinene	0.06	0.19				4.39						RI, MS
979	978	1-octen-3-ol							1.33					Std
979	979	β-pinene	0.85	0.29	0.28	0.54		7.08						RI, MS
986	983	*Cis*-pinane		0.26										RI, MS
991	989	β-myrcene	0.57		0.59		2.11	5.15	3.74			0.13	0.44	Std
991	992	3–octanol							0.27					Std
[2] 999	992	yomogi alcohol		22.83				0.77						**RI, MS Senatore et al., 2005**
1006	1005	α-phellandrene					0.04	0.83	0.56					Std
1013	1011	δ3-carene							0.21					Std
1014	1016	δ4-carene				1.23			2.26					Std
1018	1017	α-terpinene				0.5		1.01						Std
1020	1022	o-cymene		0.13					8.65					Std
1026	1025	p-cymene	0.2			0.91								Std
1031	1029	(+)-limonene	0.64		1.06	6.53	88.23			5.28	7.33	4.14	1.19	Std
1031	1030	β-phellandrene			0.26			18.8	0.98					Std
1035	1031	1,8-cineole			5.07	16.11			0.08					Std
1041	1039	α-ocimene									0.99	0.39		Std

1041	1041	salicyaldehyde		0.37											RI, MS
1046	1050	β-ocimene			1.1	0.72	0.36		0.15						Std
1060	1057	γ-terpinene	0.04	0.11		2.08			6.92						Std
[3] 1062	1062	artemisia ketone		0.17				24.61							RI, MS **Esmaeili, et al., 2006**
1063	1063	α-terpinolene	0.41		0.41	1.34									Std
1074	1068	*Cis*- sabinenehydrate							0.15						RI, MS
[4] 1083	1084	artemisia alcohol		17.38				1.36							RI, MS **Bader et al., 2006**
1089	1088	terpinolene						1.72	0.32	0.80		0.22	0.29		Std
1090	1089	2-nonanone								0.54	0.65	0.33			RI, MS
1097	1094	linalool			32.01	1.34	0.3		1.87	14.21	11.66	11.47	3.16		Std
1102	1100	isopentil-2-methylbutanoate								0.71	0.07	0.44			RI, MS
1110	1109	1-octen-3-yl-acetate			0.29										RI, MS
1117	1117	exo-fenchol							0.16						RI, MS
1120	1120	1,7,7-trimethylbicyclo [2.2.1]hept-5-en-2-one	0.9												RI, MS
1121	1121	dehydrosabina ketone		1.51											RI, MS
1122	1121	menth-2-en-1-ol<cis-para>						0.38							RI, MS
1123	1123	menth-2,8-dien-1-ol<trans-para>						0.51							RI, MS
1128	1126	chrysantenone		3.38											RI, MS
1145	1144	*Trans*-verbenol		0.45											RI, MS
1144	1144	neo ocimene allo						1.44							RI, MS
1146	1144	(*E*)-tagetone								4.48	3.28	1.72	0.84		RI, MS
1146	1146	camphor	0.08	20.82	7.42										Std
1152	1152	(*Z*)-tagetone								1.49	2.46	1.57			RI, MS
1153	1156	citronellal					0.19								RI, MS
[5] 1160	1158	4,6-dimethyloctan-3,5-dione								1.62	0.94	1.59	0.92		RI, MS **Bianchini et al. 2003**
1160	1165	iso-isopulegol					0.09								RI, MS
1166	1166	δ-terpineol								1.65			0.79		Std
1169	1170	borneol			4.62				0.74						Std
[6] 1170	1170	lavandulol			0.47										RI, MS **Blagojevic et**

1173	1176	artemysil acetate		5.38										RI, MS
1177	1177	bicyclo[4.1.0]hept-2-ene	0.67											RI, MS
1177	1177	terpinen-4-ol	0.19	0.38	3.35				2.11					Std
1183	1181	p-cymen-8-ol	0.04					3.53						RI, MS
1186	1186	santalone						0.35						MS
1186	1188	cryptone						0.44						RI, MS
1186	1189	n-hexenyl butanoate			0.82									RI, MS
1189	1190	α-terpineol	0.53	0.15	1.53	1.03	0.12	1.38		0.55	0.48	0.36	0.22	Std
1193	1193	dihydro carveol							0.49					MS
1196	1196	dihydro carvone							0.06					MS
1196	1196	myrtenol	0.14	0.13										RI, MS
1196	1198	myrtenal	0.31											RI, MS
1205	1208	*Cis*-verbenone	0.21	0.18										RI, MS
1208	1212	*Trans*-piperitol						0.13						RI, MS
1217	1220	*Trans*-carveol		3.54			0.01							RI, MS
1226	1228	citronellol					0.26							Std
1230	1229	nerol					0.86		0.16					Std
1229	1235	*Cis*-carveol	0.14	0.57										RI, MS
1235	1239	thymol methyl ether						0.23						RI, MS
1238	1241	neral					1.15							Std
1243	1246	carvone		1.03			0.01		0.19					Std
1253	1255	geraniol		0.11			1.23							Std
1267	1257	geranial					1.56							Std
1270	1272	linalyl acetate			28.65	0.84								Std
1272	1272	perilla aldehyde						0.19						RI, MS
1283	1289	*Cis*-verbenyl acetate		1.49										RI, MS
1289	1290	bornyl acetate		0.19										Std
1290	1290	lavandulyl acetate			2.95									RI, MS
1290	1295	thymol							0.04					Std
1295	1295	perilla alcohol					0.03							RI, MS
1298	1301	geranyl formate											4.93	RI, MS

1299	1312	carvacrol					0.03		57.05						Std
1342	1349	*Trans*-carveol acetate		0.98											RI, MS
1349	1349	linalyl propionate												0.12	MS
1349	1351	α–terpenyl acetate				0.89		0.19							RI, MS
1351	1353	α-cubebene	0.09									1.31			RI, MS
1353	1356	α-longipinene	0.09												RI, MS
1359	1360	eugenol							0.06						Std
1362	1362	neryl acetate			0.77									33.60	Std
1363	1362	*Cis*-carveol acetate		0.43											RI, MS
1371	1371	dihydro eugenol							0.09						MS
1371	1371	geranyl propionate					0.31								MS
1375	1377	α-ylangene	0.05												RI, MS
1377	1381	α-copaene	0.1												Std
1381	1382	geranyl acetate				2.85	0.4								Std
1385	1385	di-epi-α-cedrene (I)								1.54	6.08	3.35	1.37		MS
1382	1387	β-maaliene	0.06												RI, MS
1387	1388	myrtanol acetate													RI, MS
1388	1391	β-cubebene	0.05												Std
1390	1394	isolongifolene		0.08								1.96			RI, MS
1391	1404	7-epi-sesquithujene		0.08											RI, MS
1403	1408	methyleugenol				1.27		2.97							RI, MS
1412	1411	α-cedrene								4.17	0.29	0.14	3.52		Std
1413	1413	*Cis*-α-bergamottene								2.10	2.79	0.77	1.41		RI, MS
1415	1414	longifolene	0.33												RI, MS
1418	1419	α-santalene			0.23										RI, MS
1428	1430	(*E*)-β-caryophyllene	0.48		2.32	1.61	0.16		3.5	2.01	1.64	2.98	0.8		Std
1432	1431	β-copaene	0.08	0.07											Std
1435	1439	*Trans*–α–bergamotene					0.41			1.60	1.75	0.65	1.08		RI, MS
1440	1440	α-guaiene										0.26			Std
1441	1455	aromadendrene							0.09			0.5			Std
1455	1456	α-humulene	0.51			0.62	0.1		0.25			0.4			Std
1457	1456	(E)-β-farnesene			1.31					0.54	0.85	0.41	7.58		Std
1460	1458	alloaromandrene								1.38	1.08	2.25	1.21		Std

1463	1463	dehydroaromandrene								0.50	0.53	0.39		RI, MS
1483	1480	γ-himachalene							0.06					RI, MS
1483	1481	γ-curcumene				1.19				28.94	28.22	12.22	11.08	RI, MS
1486	1485	ar-curcumene				0.34				0.53	4.69	3.12		RI, MS
1486	1486	α-amorfene	0.09											MS
1490	1487	phenethyl isovalerate								1.27	1.38	0.75		RI, MS
1490	1490	2,10,10-trimethyl-triciclo-undec-2-en-4-one								1.03	0.81	0.63		MS
1490	1490	β-selinene									1.42	1.39		Std
1496	1491	germacrene D	3.5		0.71									Std
1496	1493	valencene					0.07							RI, MS
1500	1497	α–muurolene	0.32		0.3					1.50	1.78	2.44	0.96	Std
1505	1500	δ-selinene	0.16											Std
1506	1512	β–bisabolene					0.69		0.1	0.57	0.63		0.48	Std
1522	1514	7-epi-α-selinene								1.83	1.50	1.40	1.61	RI, MS
1514	1514	γ-cadinene								0.95	0.70	3.29		Std
1523	1520	δ–cadinene								1.65		4.45	0.51	Std
1533	1530	*Z*-nerolidol					0.05							Std
1546	1543	α-calacorene						0.43		0.50	0.81	0.74	0.67	RI, MS
1546	1544	α-calacorene	0.08											RI, MS
1547	1546	selina-3,7(11)diene										1.01		RI, MS
1557	1558	caryophyllene alcohol							0.06					RI, MS
1563	1568	*E*-nerolidol						0.23		0.45	0.46	5.07	0.27	Std
1578	1579	spathulenol						1.03	0.06					Std
1579	1580	*Trans*-sesquisabinene hydrate						0.31						RI, MS
1583	1581	α–caryophyllene oxide		0.28	0.27				0.54					RI, MS
1585	1584	globulol										0.29		RI, MS
1601	1600	guaiol								1.88	1.42	2.08	1.33	RI, MS
[7] 1616	1619	1,10-di-epi-cubenol								0.38	0.55	0.47	0.37	RI, MS **Maccioni et al., 2007**
1621	1621	5-eudesmen-11-ol								9.81	7.39	10.35	4.34	MS
1621	1624	10-epi-γ-eudesmol								1.05	0.75	0.39	1.52	RI, MS

1628	1628	β-aplopenone						0.05						MS
1632	1632	isomenthone<2-(3-oxobutyl)->						1.82						MS
1632	1634	γ-eudesmol			0.33									Std
1634	1637	selina-1,3,7(11)-trien-8-one						0.29						RI, MS
1651	1647	β-eudesmol								0.56	0.36	1.06	1.64	Std
1654	1651	α–eudesmol		1.01						0.90	0.51	0.98	0.32	Std
1658	1658	patchouli alcohol								0.47	0.32	0.58	0.40	RI, MS
1660	1667	selin-11-en-α-ol					0.04							RI, MS
1680	1683	khusinol						0.1						RI, MS
1685	1684	epi-α-bisabolol					0.05							Std
1686	1692	α-bisabolol						2.14						Std
1700	1713	eudesm-7(11)-en-4-ol						0.81						RI, MS
1713	1718	curcumen-15-al<ar>						0.95						RI, MS
1718	1725	curcupherol						0.27						RI, MS
1725	1738	α-farnesol			0.9									Std
1732	1738	chamazulene		0.38										
1757	1757	α-oxobisabolene						0.67						RI, MS
2300	2315	tricosane					0.05							RI, MS
			91.54	91.18	95.00	97.25	99.47	97.48	96.75	99.73	98.44	91.62	88.97	

Table. Characterization of 11 essential oils used for antimicrobial Tests

[a]ID = Identification methods: MS by comparison of the Mass spectrum with those of the computer mass libraries Adams, Nist 11 and by interpretation of the mass spectra fragmentations. RI by comparison of retention index with those reported in literature. Std by comparison of the retention time and mass spectrum of available authentic standards. No-polar column ZB-5. Data are the mean of three replicates.

*****_Juniperus oxycedrus_ L. - ssp._macrocarpa_ (Sibth. et Sm.) Ball

°_Helichrysum microphyllum_ Cambess. subsp._tyrrhenicum_ Bacch., Brullo & Giusso

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