Supplementary Materials

Table S1. Secondary metabolites of the genus *Litophyton* from 1975 to July, 2023.

No.	Name	Class	Species	Locality	Bioassays	Ref.
1	(–)-bicyclogermacrene	bicyclogermacrane sesquiterpene	*Litophyton arboreum*	near Bali, Indonesia	antiproliferative activities against the L-929 and K-562 cell lines (GI_{50} 186±6 and 200±8 μM, respectively), cytotoxic effect against the HeLa cell line (CC_{50} 182±8 μM)	[24]
2	(2*E*,6*E*)-3-isopropyl-6-methyl-10-oxoundeca-2,6-dienal	*sec*-germacrane sesquiterpene	*L. arboreum*	Neweba, Egypt (Red Sea)	anti-malarial activity against chloroquine-sensitive *Plasmodium falciparum* D6 and chloroquine-resistant *Plasmodium falciparum* W2 (IC_{50} 3.7 amd 2.2 mg/mL, respectively), non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]
3	alismol	guaiane sesquiterpene	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	inhibitory activity against HIV-1 protease receptor (IC_{50} 7.20±0.7 μM), cytotoxic activities against the HeLa and Vero cell lines (IC_{50} 30 and 49 μM, respectively)	[25]
			L. arboreum	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic effects against the HepG2, MDA and A549 cancer cell lines (IC_{50} 4.52, 7.02 and 9.23 μg/mL, respectively)	[26]
			L. arboreum	Jeddah, Saudi Arabia (Red Sea)	antibacterial activities against *Escherichia coli* ATCC 10536, *Pseudomonas aeruginosa* NTCC 6750, *Bacillus cereus* ATCC 9634, *Bacillus subtilis* ATCC6633, *Staphylococcus aureus* ATCC5141 (MIC 9.2, 10.4, 4.3, 5.0, and 9.2 μg/mL, respectively), antifungal activities against *Candida albicans* and *Aspergillus niger* (MIC 10.1 and 7.2 μg/mL, respectively), cytotoxic effects against MCF-7, HCT-116 and HepG2 cell lines (IC_{50} 44.52±0.5, 31.45±1.19, and 10.71±1.18 μM, respectively)	[27]
			L. arboreum	Neweba, Egypt (Red Sea)	[a] –	[17]
4	10-*O*-methyl alismoxide	guaiane sesquiterpene	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic activities against the HeLa, Vero and U937 cell lines (IC_{50} 38±0.7, 49.8±0.5 and 50±0.23 μM, respectively)	[25]

No.	Name	Class	Species	Locality	Bioassays	Ref.
5	alismoxide	guaiane sesquiterpene	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	inactive against the HeLa, Vero and U937 cell lines (all IC_{50} >100 μM)	[25]
			L. arboreum	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell line (all IC_{50} >100 μmol/mL)	[28]
			L. arboreum	Neweba, Egypt (Red Sea)	[a] –	[17]
6	alismorientol B	guaiane sesquiterpene	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	antibacterial activities against *Escherichia coli* ATCC 10536, *Pseudomonas aeruginosa* NTCC 6750, *Bacillus cereus* ATCC 9634, *Bacillus subtilis* ATCC6633, *Staphylococcus aureus* ATCC5141 (MIC 3.4, 7.7, 1.3, 6.8, and 8.3 μg/mL, respectively), antifungal activities against *Candida albicans* and *Aspergillus niger* (MIC 6.0 and 8.4 μg/mL, respectively), cytotoxic effects against MCF-7, HCT-116 and HepG2 cell lines (IC_{50} 4.32±0.13, 27.86±1.28 and 12.27±1.09 μM, respectively)	[27]
7	litoarbolide A	guaiane sesquiterpene	*L. arboreum*	Neweba, Egypt (Red Sea)	no anti-malarial activity against chloroquine-sensitive *Plasmodium falciparum* D6 and chloroquine-resistant *Plasmodium falciparum* W2 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]
8	4*α*,7*β*,10*α*-trihydroxyguai-5-ene	guaiane sesquiterpene	*L. arboreum*	Neweba, Egypt (Red Sea)	no anti-malarial activity against chloroquine-sensitive *Plasmodium falciparum* D6 and chloroquine-resistant *Plasmodium falciparum* W2 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]
9	leptocladol B	guaiane sesquiterpene	*L. arboreum*	Neweba, Egypt (Red Sea)	anti-malarial activity against chloroquine-resistant *Plasmodium falciparum* W2 (IC_{50} 4.3 mg/mL), no anti-malarial effect againste hloroquine-sensitive *Plasmodium falciparum* D6 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration	[17]

No.	Name	Class	Species	Locality	Bioassays	Ref.
					of 4.76 mg/mL	
10	nephthetetraol	guaiane sesquiterpene	*L. arboreum*	Neweba, Egypt (Red Sea)	anti-malarial activity against chloroquine-resistant *Plasmodium falciparum* W2 (IC_{50} 3.2 mg/mL), no anti-malarial effect againste hloroquine-sensitive *Plasmodium falciparum* D6 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]
11	litopharbol	pseudoguaiane sesquiterpene	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	antibacterial activities against *Escherichia coli* ATCC 10536, *Pseudomonas aeruginosa* NTCC 6750, *Bacillus cereus* ATCC 9634, *Bacillus subtilis* ATCC6633, *Staphylococcus aureus* ATCC5141 (MIC 9.0, 3.6, 1.8, 5.8, and 9.6 μg/mL, respectively), antifungal activities against *Candida albicans* and *Aspergillus niger* (MIC 12.5 and 12.9 μg/mL, respectively), cytotoxic effects against MCF-7, HCT-116 and HepG2 cell lines (IC_{50} 9.42±0.17, 26.21±2.249 and 38.92±1.12 μM, respectively)	[27]
12	litopharbdiol	pseudoguaiane sesquiterpene	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	[a] –	[18]
13	3*α*,6*α*-epidioxyhimachal-1-ene	himachalene sesquiterpene	*L. arboreum*	Jeddah, Saudi Arabi (Red Sea)	[b] antiproliferative effects toward MCF-7, HCT116 and HepG2 cell lines	[29]
14	5*β*,8*β*-epidioxy-11-hydroxy-6-eudesmene	eudesmane sesquiterpene	*L. arboreum*	Hurghada, Egypt (Red Sea)	cytotoxic effect against A549 (IC_{50} 67.3±9.9 μmol/mL), inactive against the MCF-7 and HepG2 cell line (both IC_{50} >100 μmol/mL)	[28]
15	chabrolidione B	*seco*-eudesmane sesquiterpene	*L. arboreum*	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell line (all IC_{50} >100 μmol/mL)	[28]
16	teuhetenone A	tri-nor-eudesmane sesquiterpene	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	antibacterial activities against *Escherichia coli* ATCC 10536, *Pseudomonas aeruginosa* NTCC 6750, *Bacillus cereus* ATCC 9634, *Bacillus subtilis* ATCC6633, *Staphylococcus aureus* ATCC5141 (MIC 1.9, 2.8, 5.4, 4.3, and 10.9 μg/mL, respectively), antifungal activities against *Candida albicans*	[27]

No.	Name	Class	Species	Locality	Bioassays	Ref.
					and *Aspergillus niger* (MIC 4.1 and 7.4 μg/mL, respectively), cytotoxic effect against and HepG2 cell line (IC_{50} 39.23±3.21 μM), non-toxic to the MCF-7 and HCT-116 cell lines (both IC_{50} >100 μM)	
17	calamusin I	tri-nor-eudesmane sesquiterpene	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	antibacterial activities against *Escherichia coli* ATCC 10536, *Pseudomonas aeruginosa* NTCC 6750, *Bacillus cereus* ATCC 9634, *Bacillus subtilis* ATCC6633, *Staphylococcus aureus* ATCC5141 (MIC 3.2, 1.2, 6.1, 7.8, and 7.4 μg/mL, respectively), antifungal activities against *Candida albicans* and *Aspergillus niger* (MIC 3.2 and 5.6 μg/mL, respectively), cytotoxic effects against MCF-7 and HepG2 cell lines (IC_{50} 6.43±0.23 and 13.46±1.16 μM, respectively), non-toxic to the HCT-116 cell line (IC_{50} >100 μM)	[27]
18	7-oxo-tri-nor-eudesm-5-en-4*β*-ol	tri-nor-eudesmane sesquiterpene	*L. arboreum*	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell line (all IC_{50} >100 μmol/mL)	[28]
19	11,12-dihydroxy-6,10-eremophiladiene	eremophilane sesquiterpene	*Litophyton nigrum*	Xisha Islands, Hainan, China (South China Sea)	[a] –	[23]
20	linardosinene B	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	cytotoxic effect against the THP-1 cell line (IC_{50} 59.49 μM)	[12]
21	linardosinene C	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	cytotoxic activities against the SNU-398 and HT-29 cell lines (IC_{50} 24.3 and 44.7 μM, respectively), inactive against the Capan-1 and A549 cell lines (both IC_{50} >50 μM)	[12]
22	linardosinene D	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inhibitory effect against BRD4 at a concentration of 10 μM with inhibitory rate 16.3%	[30]
23	linardosinene E	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inhibitory effect against BRD4 at a concentration of 10 μM with inhibitory rate 15.8%	[30]

No.	Name	Class	Species	Locality	Bioassays	Ref.
24	linardosinene F	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inhibitory effect against BRD4 at a concentration of 10 μM with inhibitory rate 17.6%	[30]
25	linardosinene G	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inhibitory effect against BRD4 at a concentration of 10 μM with inhibitory rate 18.1%	[30]
26	linardosinene I	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inhibitory activity against PTP1B (IC_{50} 10.67 ± 1.81 μg/mL), cytotoxic activities against the HT-29, Capan-1 and SNU-398 cell lines (IC_{50} 35.48 ± 11.22, 42.55 ± 2.51, and 25.17 ± 11.13 μM, respectively)	[23]
27	emnal-l(l0)-ene-7*β*,12*α*-diol	nardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inactive against PTP1B (IC_{50} >20 μg/mL) and HT-29, Capan-1 and SNU-398 cell lines (all IC_{50} >50 μM)	[23]
28	paralemnolin J	nardosinane sesquiterpenes	*Litophyton setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
29	(l*S*,8*S*,8*aS*)-*l*-[(*E*)-2′-acetoxy-l′-methylethenyl]-8,8*a*-dimethyl-3,4,6,7,8,8*a*-hexahydronaphthalen-2(1*H*)-one	nardosinane sesquiterpenes	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
30	linardosinene A	nornardosinane sesquiterpenes	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inactive against the THP-1 cell line and the PTP1B, BRD4, HDAC1 and HDAC6 protein kinases	[12]
31	linardosinene H	eremophilane-nardosinane bis-sesquiterpene	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inactive against PTP1B (IC_{50} >20 μg/mL) and HT-29, Capan-1 and SNU-398 cell lines (all IC_{50} >50 μM)	[23]
32	lineolemnene A	neolemnane sesquiterpene	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	cytotoxic activity against the SNU-398 cell line (IC_{50} 44.4 μM), inactive against the HT-29, Capan-1 and A549 cell lines (all IC_{50} >50 μM)	[12]
33	lineolemnene B	neolemnane sesquiterpene	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	cytotoxic activity against the SNU-398 cell line (IC_{50} 27.6 μM), inactive against the HT-29, Capan-1 and A549 cell lines (all IC_{50} >50 μM)	[12]

No.	Name	Class	Species	Locality	Bioassays	Ref.
34	lineolemnene C	neolemnane sesquiterpene	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inactive against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >50 μM)	[12]
35	4-acetoxy-2,8-neolemnadien-5-one	neolemnane sesquiterpene	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	[a] –	[12]
			L. setoensis	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
36	paralemnolin E	neolemnane sesquiterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
37	lineolemnene D	seconeolemnane sesquiterpene	*L. nigrum*	Xisha Islands, Hainan, China (South China Sea)	inactive against the THP-1 cell line and the PTP1B, BRD4, HDAC1 and HDAC6 protein kinases	[12]
38	nephtenol	cembrane diterpene	*Litophyton viridis*	Serwaru, Leti Island, Indonesia	[a] –	[19]
			L. arboreum	Hurghada, Egypt (Red Sea)	[a] –	[31]
			L. arboreum	Jeddah, Saudi Arabia (Red Sea)	[a] –	[18]
39	2-hydroxynephtenol	cembrane diterpene	*L. viridis*	Serwaru, Leti Island, Indonesia	[a] –	[19]
40	(3*E*,11*E*)-cembra-3,8(19),11,15-tetraene-7α-ol	cembrane diterpene	*L. arboreum*	Hurghada, Egypt (Red Sea)	[a] –	[31]
41	sarcophytol M	cembrane diterpene	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	inhibitory activity against HIV-1 protease receptor (IC_{50} 15.7±0.10 μM), cytotoxic activities against the HeLa, Vero and U937 cell lines (IC_{50} 27.5±0.2, 22±0.2 and 31.7±3.2 μM, respectively)	[25]
42	11-acetoxy-15,17-dihydroxy-2,12-epoxy-(3*E*,7*E*)-1-cembra-3,7-diene	cembrane diterpene	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	antiproliferative effects toward MCF-7, HCT116 and HepG2 cell lines (IC_{50} 19.1±0.032, 22.0±0.092, 24.0±0.032 μM, respectively)	[29]

No.	Name	Class	Species	Locality	Bioassays	Ref.
43	11*β*,12*β*-epoxypukalide	cembrane diterpene	*L. arboreum*	near Bali, Indonesia	antiproliferative activities against the L-929 and K-5629 cell lines (both GI_{50} >129 μM, respectively), cytotoxic effect against the HeLa cell line (CC_{50} 115±6 μM)	[24]
44	litophynin A	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	insect growth inhibitory against the silkworm *Bombyx mori* L. (ED_{50} 12 ppm)	[32]
45	litophynin B	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	insect growth inhibitory against the silkworm *Bombyx mori* L. (ED_{50} 2.7 ppm)	[32]
46	litophynin C	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	insect growth inhibitory against the second instar larvae of the silkworm *Bombyx mori* L. (ED_{50} 25 ppm)	[33]
47	litophynin D	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	significant brine shrimp lethalty (LD_{50} 0.9 ppm)	[34]
48	litophynin E	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	[a] –	[34]
			Litophyton sp.	Nango-cho, Miyazaki Prefecture, Japan	[b] positive in a hemolytic reaction test	[37]
49	litophynin F	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	inactive against the second instar larvae of the silkworm *Bombyx mori* L. at 100 ppm)	[35]
			Litophyton viscudium	Otsuki Town, Kochi Prefecture, Japan	cytotoxic activity against the HL-60 cell line (IC_{50} 18 μM)	[16]
50	litophynin G	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	insect growth inhibitory against the second instar larvae of the silkworm *Bombyx mori* L. (ED_{50} 42 ppm)	[35]
51	litophynin H	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	inactive against the second instar larvae of the silkworm *Bombyx mori* L. at 100 ppm	[35]
			Litophyton sp.	Nango-cho, Miyazaki Prefecture, Japan	[b] positive in a hemolytic reaction test	[37]
52	litophynin I	eunicellane diterpene	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	significant molluscicidal activity against the muricid gastropod *Drupella fragum* with 100% mortality within 24 hours at 30 ppm, repellent activity against the gastropod when impregnated on filterpaper by 45 μg/cm^2.	[36]
53	litophynin J	eunicellane	*Litophyton* sp.	Sukumo Bay, Kochi	significant molluscicidal activity against the muricid	[36]

No.	Name	Class	Species	Locality	Bioassays	Ref.
		diterpene		Prefecture, Japan	gastropod *Drupella fragum* with 100% mortality within 24 hours at 30 ppm, repellent activity against the gastropod when impregnated on filterpaper by 45 μg/cm^2.	
54	litophynol A	eunicellane diterpene	*Litophyton* sp.	Nango-cho, Miyazaki Prefecture, Japan	[b] positive in a hemolytic reaction test	[37]
55	litophynol B	eunicellane diterpene	*Litophyton* sp.	Nango-cho, Miyazaki Prefecture, Japan	[b] positive in a hemolytic reaction test	[37]
56	litophynin I monoacetate	eunicellane diterpene	*Litophyton* sp.	Nango-cho, Miyazaki Prefecture, Japan	[b] positive in a hemolytic reaction test	[37]
57	[c] 6-oxo litophynin H	eunicellane diterpene	*L. viscudium*	Otsuki Town, Kochi Prefecture, Japan	cytotoxic activity against the HL-60 cell line (IC_{50} 20 μM)	[16]
58	[c] 6-oxo litophynin H 12-acetate	eunicellane diterpene	*L. viscudium*	Otsuki Town, Kochi Prefecture, Japan	cytotoxic activity against the HL-60 cell line (IC_{50} 20 μM)	[16]
59	[c] 6-oxo litophynol A	eunicellane diterpene	*L. viscudium*	Otsuki Town, Kochi Prefecture, Japan	cytotoxic activity against the HL-60 cell line (IC_{50} 5.7 μM)	[16]
60	[c] 6-*epi* litophynol A	eunicellane diterpene	*L. viscudium*	Otsuki Town, Kochi Prefecture, Japan	cytotoxic activity against the HL-60 cell line (IC_{50} 4.2 μM)	[16]
61	[c] 6-methyl litophynin E	eunicellane diterpene	*L. viscudium*	Otsuki Town, Kochi Prefecture, Japan	cytotoxic activity against the HL-60 cell line (IC_{50} 50 μM)	[16]
62	lemnabourside	serrulatane diterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
63	biflora-4,9,15-triene	serrulatane diterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
64	litosetoenin A	5,9-cyclized serrulatane diterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
65	litosetoenin B	5,9-cyclized serrulatane diterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
66	litosetoenin C	5,9-cyclized	*L. setoensis*	Singaraja, Bali Island,	weak cytotoxic activities against the HT-29, Capan-1, A549,	[15]

No.	Name	Class	Species	Locality	Bioassays	Ref.
		serrulatane diterpene		Indonesia	and SNU-398 cell lines (all IC_{50} >20 μM)	
67	litosetoenin D	5,9-cyclized serrulatane diterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
68	litosetoenin E	5,9-cyclized serrulatane diterpene	*L. setoensis*	Singaraja, Bali Island, Indonesia	weak cytotoxic activities against the HT-29, Capan-1, A549, and SNU-398 cell lines (all IC_{50} >20 μM)	[15]
69	all-*trans*-peridinin	tetraterpene	*L. arboreum*	Hurghada, Egypt (Red Sea)	antiproliferative activities against the HUVEC and K-562cell lines (GI_{50} 48.4±1.2 and 53.8±3.9 μM, respectively), cytotoxicity against the HeLa cell line (IC_{50} 51.9±0.7 μM)	[31]
70	4*α*-methyl-3*β*,8*β*-dihydroxy-5*α*-ergost-24(28)-en-23-one	4*α*-methylated steroid	*L. viridis*	Lesser Sunda Islands, Indonesia	[a] –	[40]
71	4*α*,24-dimethyl-5*α*-cholest-24(28)-en-3*β*,8*β*,18-triol	4*α*-methylated steroid	*Litophyton mollis*	Hurghada, Egypt (Red Sea)	cytotoxic activities against the K562 and A549 cell lines (IC_{50} 8.9±0.9 and 25.7±1.5 μM, respectively)	[41]
72	(22*E*,24*R*)-4*α*,24-dimethyl-5*α*-cholest-22-en-3*β*,8*β*,18-triol	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	inactive against the K562 and A549 cell lines (both IC_{50} >50 μM)	[41]
73	(22*E*)-4*α*,24-dimethyl-5*α*-cholesta-22,24(28)-dien-3*β*,8*β*,18-triol	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	inactive against the K562 and A549 cell lines (both IC_{50} >50 μM)	[41]
74	nebrosteroid M	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	cytotoxic activity against the A549 cell line (IC_{50} 20.4±1.1 μM), inactive against the K562 cell line (IC_{50} >50 μM)	[41]
			L. arboreum	Hurghada, Egypt (Red Sea)	cytotoxic activity against the A549 and MCF-7 cell line (IC_{50} 36.9±2.9 and 55.3±4.9 μmol/mL, respectively), inactive against the HepG2 cell line (IC_{50} >100 μmol/mL)	[28]
			L. arboreum	Neweba, Egypt (Red Sea)	no anti-malarial activity against chloroquine-sensitive *Plasmodium falciparum* D6 and chloroquine-resistant *Plasmodium falciparum* W2 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]

No.	Name	Class	Species	Locality	Bioassays	Ref.
75	(22*E*,24*R*)-4*α*,24-dimethyl-5*α*-cholest-22-en-3*β*,8*β*,11*β*-triol	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	cytotoxic activities against the K562 and A549 cell lines (IC_{50} 7.7±0.8 and 20.8±1.2 μM, respectively)	[41]
			L. arboreum	Neweba, Egypt (Red Sea)	no anti-malarial activity against chloroquine-sensitive *Plasmodium falciparum* D6 and chloroquine-resistant *Plasmodium falciparum* W2 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]
76	nebrosteroid D	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	cytotoxic activities against the K562 and A549 cell lines (IC_{50} 6.0±0.5 and 22.1±1.4 μM, respectively)	[41]
77	nebrosteroid A	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	cytotoxic activity against the K562 cell line (IC_{50} 5.8±0.8 μM)	[41]
78	23*ξ*-acetoxy-4*α*,24-dimethyl-5*α*-cholest-24(28)-en-3*β*,8*β*,11*β*-triol	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	cytotoxic activity against the K562 cell line (IC_{50} 5.6±1.2 μM)	[41]
79	(22*E*,24*R*)-4*α*,23,24-trimethyl-5*α*-cholest-22-en-3*β*,8*β*,11*β*-triol	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	inactive against the K562 and A549 cell lines (both IC_{50} >50 μM)	[41]
			L. arboreum	Neweba, Egypt (Red Sea)	no anti-malarial activity against chloroquine-sensitive *Plasmodium falciparum* D6 and chloroquine-resistant *Plasmodium falciparum* W2 at the concentration of 4.76 mg/mL, non-toxic to the Vero cell line at the concentration of 4.76 mg/mL	[17]
80	(22*Z*)-4*α*,24*ξ*-dimethyl-5*α*-cholest-22-en-3*β*,8*β*,11*β*-triol	4*α*-methylated steroid	*L. mollis*	Hurghada, Egypt (Red Sea)	[a] –	[41]
81	4*α*,24-dimethyl-cholest-22*Z*-en-3*β*-ol	4*α*-methylated steroid	*L. arboreum*	Hurghada, Egypt (Red Sea)	[a] –	[45]
82	24-methylenecholest-5-en-3*β*,7*β*,19-triol	steroid	*L. viridis*	Serwaru, Leti Island, Indonesia	[a] –	[39]
			L. arboreum	Xisha Islands, Hainan, China (South China Sea)	[a] –	[48]
			L. arboreum	Sharm El-Sheikh, Egypt	cytotoxic activities against the HeLa, Vero and U937 cell	[25]

No.	Name	Class	Species	Locality	Bioassays	Ref.
				(Red Sea)	lines (IC_{50} 8±0.5, 11.4±0.04 and 16.4±1.25 μM, respectively)	
			L. arboreum	Hurghada, Egypt (Red Sea)	[a] –	[45]
			L. arboreum	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic effects against the HepG2, MDA and A549 cancer cell lines (IC_{50} 8.5, 5.5 and 9.3 μg/mL, respectively)	[26]
			L. arboreum	Jeddah, Saudi Arabia (Red Sea)	[a] –	[18]
83	7-acetoxy-24-methylenecholest-5-en-3*β*,7*β*,19-triol	steroid	*L. viridis*	Serwaru, Leti Island, Indonesia	[a] –	[39]
			L. arboreum	Sharm El-Sheikh, Egypt (Red Sea)	inhibitory activity against HIV-1 protease receptor (IC_{50} 4.85±0.18 μM), cytotoxic activities against the HeLa, Vero and U937 cell lines (IC_{50} 5.3±0.60, 31.3±14.03 and 10.6±0.12 μM, respectively)	[25]
			L. arboreum	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic effects against the HepG2, MDA and A549 cancer cell lines (IC_{50} 6.07, 6.3 and 6.2 μg/mL, respectively)	[26]
			L. arboreum	Neweba, Egypt (Red Sea)	[a] –	[17]
			L. arboreum	Jeddah, Saudi Arabia (Red Sea)	[b] antiproliferative effects toward MCF-7, HCT116 and HepG2 cell lines	[29]
84	litosterol	steroid	*L. viridis*	Ishiqaki Isoland, Okinawa, Japan	[a] –	[47]
			L. arboreum	Hurghada, Egypt (Red Sea)	[a] –	[45]
			L. arboreum	Neweba, Egypt (Red Sea)	[a] –	[17]
85	5,6-epoxylitosterol	steroid	*L. viridis*	Ishiqaki Isoland, Okinawa, Japan	antileukemic activity against the P388 cell line (IC_{50} 0.5 *μ*g/mL)	[47]
86	(24*E*)-24-ethyl-5*α*-cholesta-8,24(28)-diene-3*β*,12*β*,19-triol	steroid	*L. arboreum*	Xisha Islands, Hainan, China (South China Sea)	[a] –	[48]

No.	Name	Class	Species	Locality	Bioassays	Ref.
87	24-methylcholesta-5,24(28)-diene-3β-ol	steroid	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic activities against the HeLa and Vero cell lines (IC_{50} 48±8.7 and 100±1.2 μM, respectively), inactive against the U937 cell line (IC_{50} >100 μM)	[25]
			L. arboreum	Hurghada, Egypt (Red Sea)	[a] –	[45]
			L. arboreum	Jeddah, Saudi Arabia (Red Sea)	[a] –	[18]
			L. arboreum	Hurghada, Egypt (Red Sea)	cytotoxic activities against the A549, MCF-7 and HepG2 cell line (IC_{50} 28.5±4.4, 70.0±2.3 and 77.6±3.3 μmol/mL, respectively)	[28]
88	3*β*,7*β*-dihydroxy-24-methylenecholesterol	steroid	*L. arboreum*	Neweba, Egypt (Red Sea)	anti-malarial activity against chloroquine-resistant *Plasmodium falciparum* W2 (IC_{50} 4.0 mg/mL), no anti-malarial effect againste hloroquine-sensitive *Plasmodium falciparum* D6 at the concentration of 4.76 mg/mL	[17]
89	chabrolosteroid I	steroid	*L. arboreum*	Neweba, Egypt (Red Sea)	no anti-malarial effect against chloroquine-resistant *Plasmodium falciparum* W2 and chloroquine-sensitive *Plasmodium falciparum* D6 at the concentration of 4.76 mg/mL	[17]
90	13,14-*seco*-22-norergosta-4,24(28)-dien-19-hydroperoxide-3-one	steroid	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	[b] antiproliferative effects toward MCF-7, HCT116 and HepG2 cell lines	[29]
91	sarcsteroid F	steroid	*Litophyton* sp.	Egyptian Red Sea	[a] –	[21]
92	24-methylenecholestane-1*α*,3β,5*α*,6β,11*α*-pentol-11-monoacetate	steroid	*Litophyton* sp.	Egyptian Red Sea	[a] –	[21]
93	erythro-*N*-dodecanoyl-docosasphinga-(4*E*,8*E*)-dienine	ceramide	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic activity against the HeLa cell line (IC_{50} 38.17±0.7 μM), inactive against the Vero and U937 cell lines (both IC_{50} >100 μM)	[25]
			L. arboreum	Jeddah, Saudi Arabia (Red Sea)	[b] antiproliferative effects toward MCF-7, HCT116 and HepG2 cell lines	[29]
			L. arboreum	Jeddah, Saudi Arabia	[a] –	[27]

No.	Name	Class	Species	Locality	Bioassays	Ref.
				(Red Sea)		
			L. arboreum	Neweba, Egypt (Red Sea)	[a] –	[17]
94	erythro-*N*-palmityl-octadecasphinga-4(*E*),8(*E*)-dienin	ceramide	*L. arboreum*	Hurghada, Egypt (Red Sea)	[a] –	[45]
95	thymine	nucleotide	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	[a] –	[27]
			L. arboreum	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell lines (all IC_{50} >100 μg/mL), inactive against against *Leishmania major* (IC_{50} >100 μg/mL)	[49]
96	thymidine	nucleotide	*L. arboreum*	Jeddah, Saudi Arabia (Red Sea)	[a] –	[27]
97	uracil	nucleotide	*L. arboreum*	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell lines (all IC_{50} >100 μg/mL), inactive against against *Leishmania major* (IC_{50} >100 μg/mL)	[49]
98	uridine	nucleotide	*L. arboreum*	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell lines (all IC_{50} >100 μg/mL), inactive against against *Leishmania major* (IC_{50} >100 μg/mL)	[49]
99	PGB_2 methyl ester	prostaglandin	*L. arboreum*	gulf of Aqaba, Eilat, Israel (Red Sea)	[a] –	[50]
100	litophytolide A	γ-lactone	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	[a] –	[51]
101	litophytolide B	γ-lactone	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	[a] –	[51]
102	[c] (*R*)-5-((*S*,2*Z*,4*E*)-1-hydroxydeca-2,4-dien-1-yl)dihydrofuran-2(3*H*)-one	γ-lactone	*L. arboreum*	gulf of Aqaba, Eilat, Israel (Red Sea)	toxic to brine shrimp *Artemia salina* (CC_{50} 15.3 μg/mL), antibacterial activeities against *Staphylococcus aureus* (diameters of inhibition zone 7.8 mm) and *Bacillus subtilis* (diameters of inhibition zone 5.6 mm), inactive against *Escherichia coli* and *Saccharomyces cerevisiae*	[50]
103	[c]	γ-lactone	*L. arboreum*	gulf of Aqaba, Eilat,	toxic to brine shrimp *Artemia salina* (CC_{50} 21.4 μg/mL),	[50]

No.	Name	Class	Species	Locality	Bioassays	Ref.
	(*R*)-5-((*S*,4*E*,8*E*)-1-hydroxy-4,8-dimethyltrideca-4,8-dien-1-yl)-5-methyldihydrofuran-2(3*H*)-one			Israel (Red Sea)	antibacterial activeities against *Staphylococcus aureus* (diameters of inhibition zone 18.6 mm) and *Bacillus subtilis* (diameters of inhibition zone 14.7 mm), inactive against *Escherichia coli* and *Saccharomyces cerevisiae*	
104	methyl (5*Z*,8*Z*,11*Z*,14*Z*,17*Z*)-5,8,11,14,17-icosapentaenoate	fatty acid	*Litophyton* sp.	Sukumo Bay, Kochi Prefecture, Japan	[a] –	[51]
105	arachidonic acid	fatty acid	*L. arboreum*	gulf of Aqaba, Eilat, Israel (Red Sea)	[a] –	[50]
106	eicosapentaenoic acid	fatty acid	*L. arboreum*	gulf of Aqaba, Eilat, Israel (Red Sea)	[a] –	[50]
107	docosahexaenoic acid	fatty acid	*L. arboreum*	gulf of Aqaba, Eilat, Israel (Red Sea)	[a] –	[50]
108	chimyl alcohol	glycerol ether	*L. arboreum*	Sharm El-Sheikh, Egypt (Red Sea)	cytotoxic activity against the HeLa and Vero cell line (IC_{50} 23.35±5.8 and 60±1.14 μM, respectively), inactive against the U937 cell lines (both IC_{50} >100 μM), inhibitory activity against HIV-1 protease receptor (IC_{50} 26.6±2.6 μM)	[25]
			L. arboreum	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell lines (all IC_{50} >100 μmol/mL)	[28]
109	batyl alcohol	glycerol ether	*L. arboreum*	Hurghada, Egypt (Red Sea)	inactive against the A549, MCF-7 and HepG2 cell lines (all IC_{50} >100 μmol/mL)	[28]

[a] The sign '–' indicated no bioassay was recorded in the work. [b] No specific data was provided in the paper. [c] Compound was named based on its structure.