Table S1. Putative compounds in the nonpolar fraction of *Phormidium papyraceum* extract determined by LC-ESI-MS/MS analysis (positive ion mode).

No.	RT [min]	Name	Formula	Molecular Weight	Area
1	2.69	Gabapentin	$C_9H_{17}NO_2$	171.13	12472336
2	4.39	Istamycin C1	$C_{19}H_{37}N_5O_6$	431.27	5366082
3	7.17	Istamycin B3	$C_{18}H_{36}N_6O_5$	416.28	13698972
4	9.74	Tetraneurin A	$C_{17}H_{22}O_6$	322.14	28204520
5	9.80	Militarinone A	$C_{26}H_{37}NO_6$	459.26	208982580
6	9.82	Autumnolide	$C_{15}H_{20}O_5$	280.13	522451803
7	9.82	6-(2,3-Dihydroxy-3-methylbutyl)-8-hydroxy-7-methoxy-2H-chromen-2-one	$C_{15}H_{18}O_6$	294.11	337988129
8	9.87	Bis(4-ethylbenzylidene)sorbitol	$C_{24}H_{30}O_6$	414.20	47360382890
9	9.87	(3R,5R)-3,5,9-trihydroxy-7-methoxy-3-methyl-1,3,4,4a,5,10a-hexahydro-10H-benzo[g]isochromen-10-one	$C_{15}H_{18}O_6$	294.11	343689661
10	9.94	Dapabutan	$C_{19}H_{40}N_2O_2$	328.31	78763831
11	10.04	Mueggelone	$C_{18}H_{28}O_3$	292.20	37452778
12	10.33	1-Cyclopropyl-N-(di-4-morpholinylphosphoryl)-2,5-dimethyl-1H-pyrrole-3-carboxamide	$C_{18}H_{29}N_4O_4P$	396.19	552705813
13	10.36	3-(1-Methyl-1H-pyrazol-4-yl)-6-{1-[6-(1-methyl-1H-pyrazol-4-yl)-1H-[1,2,3]triazolo[4,5-b]pyrazin-1-yl]ethyl}quinoline	$C_{23}H_{20}N_{10}$	436.19	3319511880
14	10.40	Diversonol	$C_{15}H_{18}O_6$	294.11	22054434
15	10.48	4-({3-[4-(2-Carboxyacetoxy)phenyl]-1-oxo-1-(pentylamino)-2-propanyl}amino)-4-oxobutanoic acid	$C_{21}H_{28}N_2O_8$	436.19	3319511880
16	10.51	3'-Myristoylcytarabine	$C_{23}H_{39}N_3O_6$	453.28	6405688
17	10.55	Phomoarcherin B	$C_{23}H_{28}O_5$	384.19	13234932
18	10.66	Kampanol A	$C_{25}H_{32}O_6$	428.22	195965660
19	10.76	Myristamine oxide	$C_{16}H_{35}NO$	257.27	63215823
20	11.16	4,4'-[1,10-Phenanthroline-2,9-diylbis(1H-1,2,3-triazole-4,1-diyl)]di(1-butanamine)	$C_{24}H_{28}N_{10}$	456.25	177889495
21	11.24	(1R,3S,4S)-N-{(1S)-1-cyano-2-[4-(1H-indol-6-yl)phenyl]ethyl}-2-azabicyclo[2.2.1]heptane-3-carboxamide	$C_{24}H_{24}N_4O$	384.19	344823384
22	11.29	Clinofibrate	$C_{28}H_{36}O_6$	468.25	6598746
23	11.55	Stachybotrin D	$C_{26}H_{35}NO_5$	441.25	18362610
24	11.59	(5beta,15beta)-3,16-Dioxo-14,15-epoxybufa-20,22-dienolide	$C_{24}H_{28}O_5$	396.19	336565086
25	11.78	2,3-Dihydroxypropyl hexadecanoate	$C_{19}H_{38}O_4$	330.27	12397757

26	11.80	1-[(3R,9R,10R)-12-[(2S)-1-Hydroxypropan-2-yl]-3,10-dimethyl-9-(methylaminomethyl)-13-oxo-2,8-dioxa-12-azabicyclo[12.4.0]octadeca-1(14),15,17-trien-16-yl]-3-propan-2-ylurea	$C_{26}H_{44}N_4O_5$	492.33	269216680
27	11.90	8-{3-Oxo-2-[(2E)-2-penten-1-yl]-1-cyclopenten-1-yl}octanoic acid	$C_{18}H_{28}O_3$	292.20	12618611
28	11.96	2-({3-Methyl-4-[(E)-2-{5-[(E)-2-(1-methyl-1H-pyrrol-2-yl)vinyl]-1H-pyrazol-3-yl}vinyl]phenoxy}methyl)pyridine	$C_{25}H_{24}N_4O$	396.19	291003372
29	12.42	Nahuoic acid A	$C_{30}H_{50}O_7$	522.35	6247344
30	12.66	1,5,9-Triacetyl-1,5,9,13-tetraazacyclopentacosan-14-one	$C_{27}H_{50}N_4O_4$	494.38	254823860
31	13.20	{[5-Hydroxy-4-(hydroxymethyl)-6-methyl-2,3-pyridinediyl]bis(methylene)}bis(tributylphosphonium)	$C_{33}H_{65}NO_2P_2$	569.45	514861161
32	13.33	Adonirubin (Phoenicoxanthin)	$C_{18}H_{18}$	580.39	3767240709
33	13.56	Retene	$C_{18}H_{18}$	234.14	68999043
34	13.59	Hexadecanamide	$C_{16}H_{33}NO$	255.25	12831350
35	13.65	Pinnatoxin A	$C_{41}H_{61}NO_9$	711.44	43627487
36	13.88	3-[(1S,3R,12bS)-3-(2-{[(3s,5s,7s)-Adamantan-1-ylmethyl]amino}-2-oxoethyl)-1-{[4-(cyclopropylcarbonyl)-1-piperazinyl]carbonyl}-12b-ethyl-4-oxo-1,2,3,4,6,7,12,12b-octahydroindolo[2,3-a]quinolizin-10-yl]-N,N-dimethylpropanamide	$C_{44}H_{60}N_6O_5$	752.46	177907038
37	13.92	Oleamide	$C_{18}H_{35}NO$	281.27	35966971
38	14.46	12-Hydroxy-8,8,21,21-tetramethyl-5,19-bis(3-methyl-2-buten-1-yl)-3,7,20-trioxahexacyclo[15.4.1.0~2,15~.0~2,19~.0~4,13~.0~6,11~]docosa-4(13),5,9,11,15-pentaene-14,18-dione	$C_{33}H_{38}O_6$	530.27	1552168751
39	14.50	N-(11-Aminoundecanoyl)-L-seryl-N-(3-cyclohexylpropyl)-L-lysinamide	$C_{29}H_{57}N_5O_4$	539.44	202837880
40	14.91	3-Hydroxyechinenone	$C_{40}H_{54}O_2$	566.41	21754215
41	14.94	Canthaxanthin	$C_{40}H_{52}O_2$	564.39	22461708
42	14.99	(3'Z)-3',4'-Didehydro-beta,psi-caroten-4-one	$C_{40}H_{52}O$	548.40	226393565
43	15.07	Metynodiol diacetate	$C_{25}H_{34}O_4$	398.24	6840438
44	15.97	Tricaprilin	$C_{27}H_{50}O_6$	470.36	65290017
45	15.98	3-Hydroxy-3'-oxo-beta,epsilon-carotene	$C_{40}H_{54}O_2$	566.41	12874622

46	16.72	(2S)-1-Hydroxy-3-(tetradecanoyloxy)-2-propanyl (5Z,8Z,11Z,14Z,17Z)-5,8,11,14,17-icosapentaenoate	$C_{37}H_{62}O_5$	586.46	347450345
47	17.78	5-Amino-N-[(2S)-1-amino-3-(2,3-dihydro-1H-indol-3-yl)-1-oxo-2-propanyl]-2-[(2Z,5Z)-5-(4-hydroxy-3,5-dimethoxybenzylidene)-4-oxo-2-(phenylimino)-1,3-thiazolidin-3-yl]pentanamide	$C_{34}H_{38}N_6O_6S$	658.26	3941037262
48	17.81	(3S,3aS,5R,5aR,6R,7S,9R,9aR)-7-(2-Hydroxy-2-propanyl)-6-(3-methoxy-3-oxopropyl)-3a,6,9a-trimethyl-3-[(3S,5S)-5-(2-methyl-1-propen-1-yl)tetrahydro-3-furanyl]-3,3a,4,5,5a,6,7,8,9,9a-decahydro-2H-cyclopenta[a]naphthalene-5,9-diyl (2R,3R,2'R,3'R)bis(2-hydroxy-3-methylpentanoate)	$C_{43}H_{70}O_{10}$	746.50	364784637
49	17.81	3-{[(2S)-3-(4-Biphenylyl)-2-({[bis(4-isopropylphenoxy)phosphoryl]methyl}amino)propanoyl]amino}propanoic acid	$C_{37}H_{43}N_2O_6P$	642.28	8716485353
50	17.90	Tetraethyl [2-(1-oxo-2,3-dihydro-1H-inden-2-yl)-1,1-ethanediyl]bis(phosphonate)	$C_{19}H_{30}O_7P_2$	432.15	246579017
51	18.17	Tert-butyl (4S)-4-({(2S)-4-tert-butoxy-2-[(tert-butoxycarbonyl)amino]-4-oxobutanoyl}amino)-5-{[(2S)-3-methyl-1-{[(2S)-3-methyl-1-{(2R)-2-[(8-methyl-5,6-dioxonon-1-en-4-yl)carbamoyl]pyrrolidin-1-yl}-1-oxobutan-2-yl]amino}-1-oxobutan-2-yl]amino}-5-oxopentanoate (non-preferred name)	$C_{47}H_{78}N_6O_{13}$	934.56	13122659538
52	18.40	Erucamide	$C_{22}H_{43}NO$	337.33	68763582
53	18.41	2-Octadecylfuran	$C_{22}H_{40}O$	320.30	71578578
54	19.06	Phenyl (2R,4R,5S,6R)-2-{(2S,3R,4S)-3-hydroxy-4-[(2R,9S,10S)-10-hydroxy-3,15-dimethoxy-7,9,11,13-tetramethyl-16-oxooxacyclohexadecan-2-yl]-2-pentanyl}-6-isopropyl-2-methoxy-5-methyltetrahydro-2H-pyran-4-carboxylate	$C_{43}H_{72}O_{10}$	748.51	11488190189
55	19.13	3-Hydroxyechinenone	$C_{40}H_{54}O_2$	566.41	707086492
56	19.18	1-Palmitoyl-2-linoleoyl-sn-glycerol	$C_{37}H_{68}O_5$	592.5	323724591
57	20.20	1-oleoyl-2-(alpha-linolenoyl)-sn-glycerol	$C_{39}H_{68}O_5$	616.51	684682119
58	20.32	(3E)-8-Phenyl-3-octen-2-one	$C_{14}H_{18}O$	202.14	165838541
59	20.33	Nootkatone	$C_{15}H_{22}O$	218.17	5731338930

60	20.69	Methyl N-{(3S,4S)-3-amino-4-[(N-{[(2-methyl-2-propanyl)oxy]carbonyl}-L-leucyl-L-valyl)amino]-5-phenylpentanoyl}-L-isoleucyl-L-valinate	$C_{39}H_{66}N_6O_8$	746.50	431241219
61	20.73	(17E)-19-Norpregna-1(10),2,4,17-tetraen-3-ol	$C_{20}H_{26}O$	282.20	500229519
62	20.80	(3'Z)-3-Hydroxy-3',4'-didehydro-beta,psi-caroten-4-one	$C_{40}H_{52}O_2$	564.40	567598467
63	20.98	Torularhodin	$C_{40}H_{52}O_2$	564.39	21466348
64	20.99	1-(9Z,12Z,15Z)-Octadecatrienoyl-2-(7Z,10Z,13Z)-hexadecatrienoyl-3-(beta-D-galactosyl)-sn-glycerol	$C_{43}H_{70}O_{10}$	746.50	483691952
65	21.29	Bis(2-methyl-2-propanyl) 1,12-dodecanediylbis({3-[(phenylacetyl)amino]propyl}carbamate)	$C_{44}H_{70}N_4O_6$	750.53	66771638352
66	21.38	N,N'-[2,8-Phenazinediylbis(methylene)]bis(N-hexyl-1-hexanamine)	$C_{38}H_{62}N_4$	574.50	2107000317
67	21.51	(3beta)-3-({1-[4-(Cyanomethyl)phenyl]-1H-1,2,3-triazol-4-yl}methoxy)lup-20(29)-en-28-oic acid	$C_{41}H_{56}N_4O_3$	652.44	1021895984
68	21.81	[(1aR,1bS,4aR,7aR,7bR,8R,9R,9aS)-9a-Acetoxy-7b,9-dihydroxy-1,1,6,8-tetramethyl-5-oxo-1a,1b,4,4a,5,7a,7b,8,9,9a-decahydro-1H-cyclopropa[3,4]benzo[1,2-e]azulen-3-yl]methyl (9Z,12Z)-9,12-octadecadienoate	$C_{40}H_{60}O_7$	652.43	953550206
69	23.25	1917934	$C_{36}H_{72}NO_8P$	677.50	170693784
70	23.45	Tanikolide	$C_{17}H_{32}O_3$	284.23	76594585
71	23.96	(2S)-3-(beta-D-Galactopyranosyloxy)-2-(palmitoyloxy)propyl (9Z,12Z,15Z)-9,12,15-octadecatrienoate	$C_{43}H_{76}O_{10}$	752.54	1492106221
72	23.96	Bacteriohopanetetrol	$C_{35}H_{62}O_4$	546.47	177835277
73	24.10	(2R,13R)-13-Acetoxy-13-{(2S,2'S,5R,5'R)-5'-[(1S)-1-acetoxyundecyl]octahydro-2,2'-bifuran-5-yl}-1-[(5S)-5-methyl-2-oxo-2,5-dihydro-3-furanyl]-2-tridecanyl acetate	$C_{43}H_{72}O_{10}$	748.51	1434049132
74	24.15	(10E,12E)-14-Hydroxy-10,12-nonadecadienoic acid	$C_{19}H_{34}O_3$	310.25	379465496
75	24.19	(2S)-1-(beta-D-Galactopyranosyloxy)-3-[(9E)-9-hexadecenoyloxy]-2-propanyl (9E,12E)-9,12-octadecadienoate	$C_{43}H_{76}O_{10}$	752.54	8578985687
76	24.24	1,1'-(1,14-Tetradecanediyl)bis(N-hexyl-4(1H)-pyridinimine)	$C_{36}H_{62}N_4$	550.50	837042097

77	24.39	(5S)-3-[(13R)-13-Hydroxy-13-{(2R,5R)-5-[(1R,4Z)-1-hydroxy-4-pentadecen-1-yl]tetrahydro-2-furanyl}tridecyl]-5-methyl-2(5H)-furanone	$C_{37}H_{66}O_5$	590.49	1408823766
78	24.65	Oligomycin C	$C_{45}H_{74}O_{10}$	774.52	27460623
79	24.65	(2R,3S,4R,5R,8R,10R,11R,12S,13S,14R)-6-Allyl-2-ethyl-3,4,10-trihydroxy-3,5,8,10,12,14-hexamethyl-15-oxo-11-{[3,4,6-trideoxy-3-(dimethylamino)-beta-D-xylo-hexopyranosyl]oxy}-1-oxa-6-azacyclopentadecan-13-yl 2,6-dideoxy-3-C-methyl-3-O-methyl-alpha-L-ribo-hexopyranoside	$C_{40}H_{74}N_2O_{12}$	774.53	3932991616
80	24.66	(3R,4S,9R,11R)-29-(4-Hydroxyphenyl)-3-methoxy-4-methyl-9,11-nonacosanediol	$C_{37}H_{68}O_4$	576.51	456932081
81	24.72	1-Palmitoyl-2-arachidonoyl-sn-glycerol	$C_{39}H_{68}O_5$	616.51	1142812028
82	25.16	N-[(2S,3S,5S)-1-Cyclohexyl-3-hydroxy-6-methyl-5-{[2-(1-piperidinyl)ethyl]carbamoyl}-2-heptanyl]-N~2~-{(2S)-1-[4-(methoxymethoxy)-1-piperidinyl]-1-oxo-3-phenyl-2-propanyl}-L-norleucinamide	$C_{44}H_{75}N_5O_6$	769.57	284110999
83	25.16	1-(1Z-octadecenyl)-2-(9Z-octadecenoyl)-sn-glycero-3-phosphoethanolamine	$C_{41}H_{80}NO_7P$	729.57	324595503
84	25.52	Azithromycin	$C_{38}H_{72}N_2O_{12}$	748.50	5647813
85	25.64	Trioctyl trimellitate	$C_{33}H_{54}O_6$	546.39	10362016
86	26.13	N-[(4-{[(2S)-1-{[(3S)-3-{[(4-{[(2S)-1-Amino-4-methyl-2-pentanyl]carbamoyl}-1H-imidazol-5-yl)carbonyl]amino}-2-oxobutyl]amino}-2-propanyl]carbamoyl}-1H-imidazol-5-yl)carbonyl]-L-alanine	$C_{26}H_4N_{10}O_7$	604.31	202925067
87	26.27	Glycidyl stearate	$C_{21}H_{40}O_3$	340.29	31983603
88	26.28	Dicyclohexyl [hydroxy(phenyl)methyl]phosphonate	$C_{19}H_{29}O_4P$	352.18	550423590
89	26.29	L-Glutaminyl-L-lysyl-L-phenylalanyl-L-seryl-L-arginine	$C_{29}H_{48}N_{10}O_8$	664.37	1046428843
90	26.41	(3R,4S,9R,11R)-27-(4-Hydroxyphenyl)-3-methoxy-4-methyl-9,11-heptacosanediol	$C_{35}H_{64}O_4$	548.48	271970294
91	26.44	(2S)-1-(beta-D-Galactopyranosyloxy)-3-(tetradecanoyloxy)-2-propanyl (9E)-9-octadecenoate	$C_{41}H_{76}O_{10}$	728.54	2404848551

92	26.50	(2S)-1-O-(7Z,10Z)-hexadecadienoyl-2-O-linoleoyl-3-O-beta-D-galactopyranosyl-sn-glycerol	$C_{43}H_{74}O_{10}$	750.53	1686532906
93	26.54	1-Palmitoleoyl-2-oleoyl-sn-glycerol	$C_{37}H_{68}O_5$	592.51	8951129873
94	26.58	(5S)-5-Methyl-3-{13-[(2R,2'R,5S,5'S)-5'-undecyloctahydro-2,2'-bifuran-5-yl]tridecyl}-2(5H)-furanone	$C_{37}H_{66}O_4$	574.50	7759906681
95	26.66	(3R,4S,5S,6R,7R,9R,10S,11S,12R,13S,14R)-10-(Cyclopentylamino)-6-{[4-(dimethylamino)-3-hydroxy-6-methyltetrahydro-2H-pyran-2-yl]oxy}-14-ethyl-7,12,13-trihydroxy-4-[(5-hydroxy-4-methoxy-4,6-dimethyltetrahydro-2H-pyran-2-yl)oxy]-3,5,7,9,11,13-hexamethyloxacyclotetradecan-2-one	$C_{42}H_{78}N_2O_{12}$	802.56	401047954
96	26.77	2,6-di-tert-butyl-4-ethylphenol	$C_{16}H_{26}O$	234.19	6068270
97	26.95	DL-Dipalmitoylphosphatidylcholine	$C_{40}H_{80}NO_8P$	733.56	8333445
98	26.95	1,3-Di-O-octadecenylglycero-2-phosphocholine	$C_{44}H_{84}NO_8P$	785.59	1059813653
99	27.07	Diundecyl phthalate	$C_{30}H_{50}O_4$	474.37	35564547
100	27.19	N~2~-[2-Ethyl-2-(isobutyrylamino)butanoyl]-N,N-dimethyl-L-argininamide	$C_{18}H_{36}N_6O_3$	384.28	229012421
101	27.21	Plakevulin A	$C_{23}H_{42}O_4$	382.30	10759831
102	27.22	1-Palmitoyl-2-palmitoleoyl-sn-glycero-3-phosphocholine	$C_{40}H_{78}NO_8P$	731.55	244274338
103	27.26	Cholesteryl acetate	$C_{29}H_{48}O_2$	428.36	7696374
104	27.37	1,2-dipalmitoyl-3-beta-D-galactosyl-sn-glycerol	$C_{41}H_{78}O_{10}$	730.56	790622750
105	27.39	1-(9Z-octadecenoyl)-2-hexadecanoyl-3-beta-D-galactosyl-sn-glycerol	$C_{43}H_{80}O_{10}$	756.58	3249433401
106	27.40	1-Hydroxy-3-(pentadecanoyloxy)-2-propanyl (9Z)-9-nonadecenoate	$C_{37}H_{70}O_5$	594.52	488647956
107	27.41	eta-Cryptoxathin-5,6-epoxide	$C_{40}H_{56}O_2$	568.43	8407643320
108	27.45	6-Methyl-4,6-bis[(1E,3E,5E)-4-methyl-6-(2,6,6-trimethyl-1-cyclohexen-1-yl)-1,3,5-hexatrien-1-yl]-1,3-cyclohexadiene-1-carbaldehyde	$C_{40}H_{54}O$	550.42	8429117682
109	27.66	1-hexadecanoyl-2-(13Z-docosenoyl)-sn-glycero-3-phosphoethanolamine	$C_{43}H_{84}NO_8P$	773.59	248798653
110	28.33	2-[(4Z,7Z)-4,7-Icosadienoyloxy]-3-(stearoyloxy)propyl 2-(trimethylammonio)ethyl phosphate	$C_{46}H_{88}NO_8P$	813.63	2424122697
111	29.07	Betulin	$C_{30}H_{50}O_2$	442.38	6574936
112	30.15	Anhydroretinol	$C_{20}H_{28}$	268.22	262190603