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APORPHINOID ALKALOIDS, V

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Substantial progress has been made since 1988 in the field of aporphinoid alkaloids, including aporphines *sensu stricto* and biogenetically related aporphinoids. This review supplements our earlier ones (102–105) by including data published since 1988, as well as by reporting several related aporphinoids not listed in the 1975, 1979, 1983, and 1988 reviews.

In the present review, 142 new or previously unlisted structures are included. A number of new aporphines have been isolated or synthesized. A novel feature of this review is that alkaloids of the eupolauramine type (azaphenanthrenes), imbiline type (4,5-dioxo-1-azaaporphinoids), and litebamine type (tetrahydropyridophenanthrenes) have been included for the first time. The biogenetic relationships between oxoaporphines, azafluorenes, azaanthracenes, 1-azaoxoaporphinoids, 4,5-dioxo-1-azaaporphinoids, and azaphenanthrenes have been reviewed (32). It has been proposed that eupolauramine may be derived biogenetically from the benzylic acid rearrangement and decarboxylation of a 4,5-dioxo-1-azaaporphine alkaloid such as imbiline-1 (35). Litebamine-type alkaloids could be derived from aporphines by rearrangement of a phenanthrene (287). Aporphine-related alkaloids such as proaporphines, dimeric aporphines, aristolochic acids, and aristololactams have been excluded from this review. However, the tropoloisoquinolines and azafluoranthenes, which had been previously reviewed in "Aporphinoid Alkaloids III" (104) and "Aporphinoid Alkaloids IV" (105), are included. These compounds may be derived from tetrahydrobenzylisoquinolines and they usually occur with oxoaporphines in the same plants.

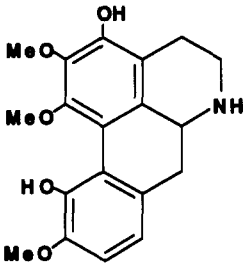
The organization, intent and content of the present review are the same as those of the previous ones, and proceed along the following plan: (a) additional data on previously reported aporphinoids (structures **1–542**) [revised structures (Table 1), additional physical and spectral data (Table 2), and known aporphinoids obtained again from botanical sources or by synthesis (Table 3)]; and (b) completely new or previously unlisted aporphinoids (structures **543–684**, Table 4). Among the newly reviewed alkaloids, aporphines (noraporphines, aporphines, aporphine *N*-oxides, quaternary aporphines, natural *N*-acylated noraporphines) include structures **543–577**, 7-hydroxy-7-methylaporphines **578–579**, oxoaporphines **580–589**, 4-oxo and 4,5-dioxoaporphines **590–598**, 7 and/or 4-oxygenated aporphines **599–611**, dehydroaporphines **612–620**, 7-methyldehydroaporphines **621–622**, phenanthrenes **623–640**, azaanthracenes **641–648**, azafluorenes **649–663**, 1-azaoxoaporphinoids **664–667**, diazafluoranthene **668**, 4,5-dioxo-1-azaaporphinoids **669–671**, azaphenanthrenes **672–677**, tropoloisoquinolines and azafluoranthenes **678–679**, miscellaneous aporphinoids **680–684**. Among the miscellaneous aporphinoids are the 7-aminoaporphinoid **680**, oxoisoaporphines **681–682**, and tetrahydropyridophenanthrenes **683–684**.

The numbering of the structural skeletons is according to the accepted ruling and indicated in Table 4 around the first structure of each subgroup. Unless stated otherwise, uv (nm, log ϵ) and cd ($\Delta\epsilon$, nm) spectra were obtained in EtOH or MeOH, and nmr spectra

in $CDCl_3$; chemical shifts are in ppm and the coupling constants are given in Hz. Values with identical superscripts may be reversed. Ir frequencies are in cm^{-1}, and melting points are in degrees centigrade.

TABLE 1. Revised Structures of Previously Reported Aporphinoid Alkaloids.

294. DANGUYELLINE



$C_{19}H_{21}O_5N$ 343.1418
Revised structure (127)

474. DUGUESPIXINE

$C_{19}H_{17}O_3N$ 307.1207
The structure given to this alkaloid is erroneous and has not yet been corrected (11).

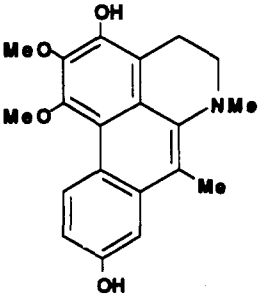
477. *O*-METHYLDUGUESPIXINE

$C_{20}H_{19}O_3N$ 321.1364
The structure given to this alkaloid is erroneous and has not yet been corrected (11).

478. TRICHOGUATTINE

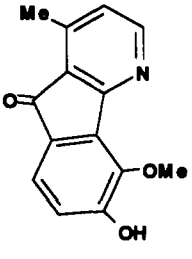
$C_{19}H_{15}O_3N$ 305.1051
The structure given to this alkaloid is erroneous and has not yet been corrected (11).

479. GOUDOTIANINE



$C_{20}H_{21}O_4N$ 339.1469
Structures of natural goudotianine and of its synthetic 2-hydroxy-1-methoxy regioisomer (isogoudotianine **622**) have been distinguished by total synthesis (40).

504. OXYLOPINE



$C_{14}H_{11}O_3N$ 241.0738
The structure of oxylopine has been revised from 5-hydroxy-6-methoxyonychine to 6-hydroxy-5-methoxyonychine; therefore, oxylopine is identical to ursuline **505** (151,158).

516. DIELSINE

$C_{13}H_9O_2N$ 211.0633
The structure given to this alkaloid is erroneous and has not yet been corrected (31). Consequently, the structure of dielsinol **517** may also be in error.

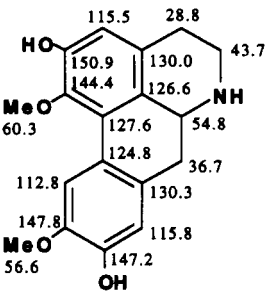
TABLE 2. Additional Physical and Spectral Data on Previously Reported Aporphinoid Alkaloids.

Aporphines *sensu stricto*

2. LIRINIDINE

$C_{18}H_{19}O_2N$ 281.1415
[α]D: +93° (*c*=0.05, MeOH) (227)

49. LAUROLITSINE
(Norboldine)



$C_{18}H_{19}O_4N$ 313.1313
[α]D: −162° (*c*=0.01M, MeOH)* (15)
^{1}H nmr: in CD_3OD (253); also given for *E* and *Z* forms of the triacetyl derivative (200).
^{13}C nmr: (CD_3OD) (253)

*(−)-Enantiomer isolated for the first time

54. LAUROTETANINE

$C_{19}H_{21}O_4N$ 327.1469
^{1}H nmr: given for *E* and *Z* forms of the diacetyl derivative (200).

56. XANTHOPLANINE

$C_{21}H_{26}O_4N^+ X^-$ 356.1861
[α]D: +65° (*c*=1.0, MeOH) (perchlorate) (163)
Ir: (KBr) 3400, 1588, 1517, 1480, 1472, 1464, 1457, 1370, 1280, 1248, 1122, 1104, 1092, 1038, 770 (163)
^{1}H nmr: in CD_3OD at 300 MHz and in Me_2CO-d_6 (163)

62. NANTENINE

$C_{20}H_{21}O_4N$ 339.1469
X-ray: (228)

71. CORYTUBERINE

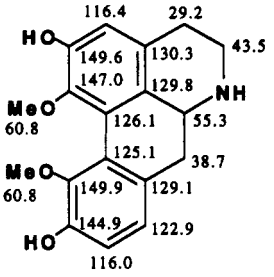
$C_{19}H_{21}O_4N$ 327.1469
[α]D: +352° (*c*=0.11, MeOH) (247)

74. CORYDINE

$C_{20}H_{23}O_4N$ 341.1626
^{13}C nmr: 152.3 (s), 149.7 (s), 144.3 (s), 142.8 (s), 131.1 (s), 128.2 (s), 128.1 (s), 126.9 (s), 124.8 (d), 124.2 (s), 119.7 (s), 111.8 (d), 111.3 (d), 63.0 (d), 62.4 (q), 56.4 (q), 53.0 (t), 44.0 (q), 35.7 (t), 29.1 (t) (93)

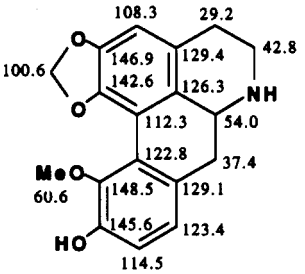
76. HERNOVINE

$C_{18}H_{19}O_4N$ 313.1313
^{13}C nmr: (DMSO-d_6) (221)



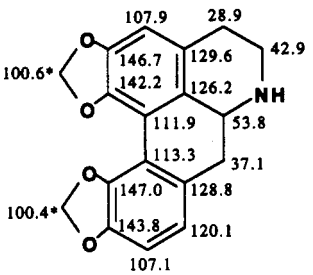
89. NANDIGERINE
(Hernangerine)

$C_{18}H_{17}O_4N$ 311.1156
^{13}C nmr: (221)



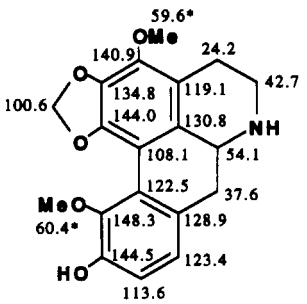
94. OVIGERINE

$C_{18}H_{15}O_4N$ 309.1000
^{13}C nmr: (221)

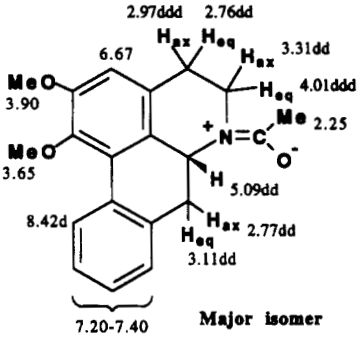


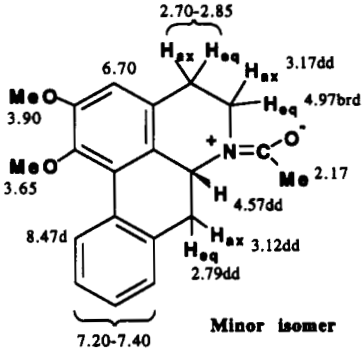
111. HERNANDINE

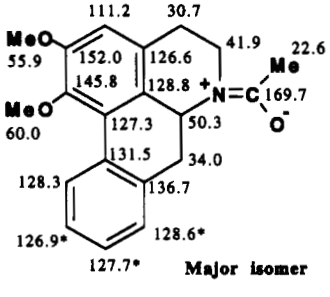
$C_{19}H_{19}O_5N$ 341.1262
^{13}C nmr: (221)

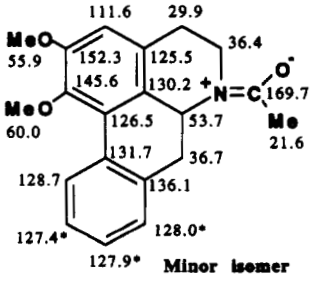


181. *N*-ACETYLNORNUCIFERINE*









$C_{20}H_{21}O_3N$ 323.1520

$[\alpha]_D$: $-377°$ ($CHCl_3$)** (215)

Ir: (KBr) 2935, 1630, 1590, 1425, 1320, 1260, 1250, 1235, 1200, 1150, 1120, 1105, 1020, 940, 845, 790, 755, 730, 640 (215)

^{1}H nmr: (300 MHz) (215)

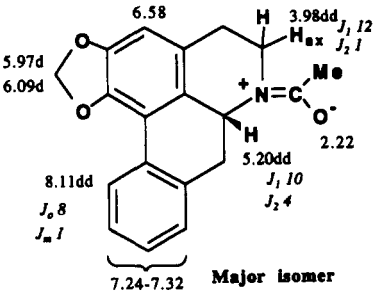
^{13}C nmr: (215)

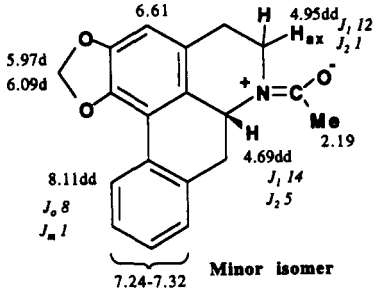
Ms: 323 (M^+, 61), 280 (3), 264 (26), 252 (29), 251 (100), 238 (2), 237 (9), 234 (2), 222 (2), 221 (4), 217 (3), 208 (3), 207 (3), 179 (3), 165 (5) (215)

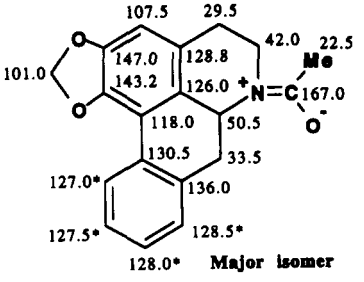
*See note given for compound **547**

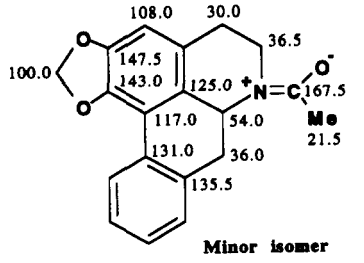
**A positive value has been erroneously given in (103).

183. *N*-ACETYLANONAINE*









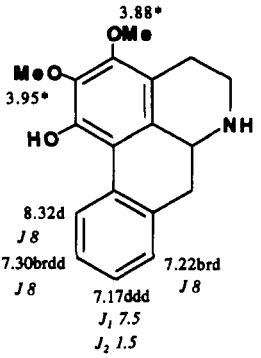
$C_{19}H_{17}O_3N$ 307.1207

^{1}H nmr: (400 MHz) (207) [also in C_5D_5N] (99)

^{13}C nmr: (207); also in C_5D_5N (99)

*See note given for compound **547**

184. ISOPILINE



$C_{18}H_{19}O_3N$ 297.1364
[α]D: +55° (*c*=0.15, MeOH)* (227)
^{1}H nmr: (400 MHz) (227)
Cd: 0 (320), −5 (290), −7 (270), 0 (251), +44 (235), 0 (223), −15 (216)* (227)

*(+)-Enantiomer isolated for the first time

185. *N*-METHYLISOPILINE

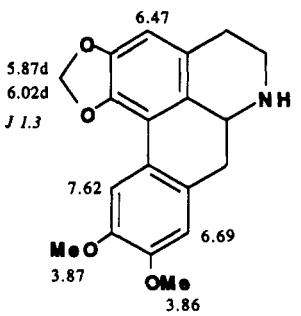
$C_{19}H_{21}O_3N$ 311.1520
[α]D: +53° (*c*=0.05, MeOH)* (227)
Ms: 311 (M^+, 100), 310 (71), 297 (12), 296 (47), 294 (14), 280 (22), 268 (30), 253 (13) (227)
Cd: 0 (320), −5 (290), −7 (267), 0 (251), +42 (235), 0 (223), −14 (217)* (227)

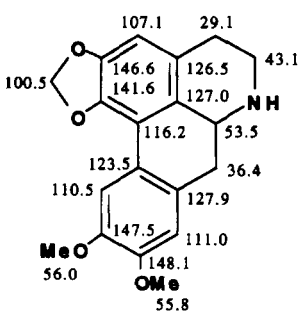
*(+)-Enantiomer isolated for the first time

188. *O*-METHYLISOPILINE
(*O*-Methylnorlirinine)

$C_{19}H_{21}O_3N$ 311.1520
[α]D: −76° (*c*=0.11, MeOH) (227)

204. NORDICENTRINE

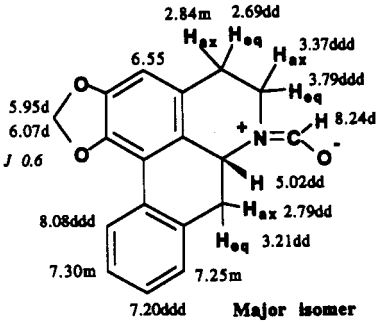


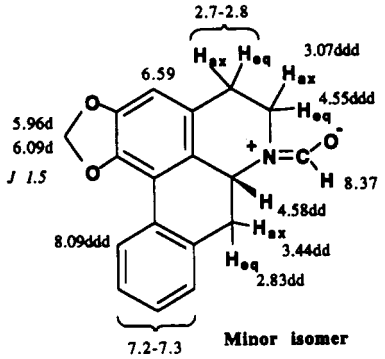


$C_{19}H_{19}O_4N$ 325.1313
[α]D: −34° (*c*=0.2, MeOH)* (175)
Ir: (KBr) 2928, 1607, 1516, 1462, 1215, 1113, 1051 (175)
^{1}H nmr: (300 MHz) (175)
^{13}C nmr: (175)
Ms: 325 (M^+, 85), 324 (100), 323 (18), 310 (13), 309 (13), 308 (17), 296 (12), 293 (20), 266 (10), 265 (12) (175)

*(−)-Enantiomer isolated for the first time

251. *N*-FORMYLANONAINE*





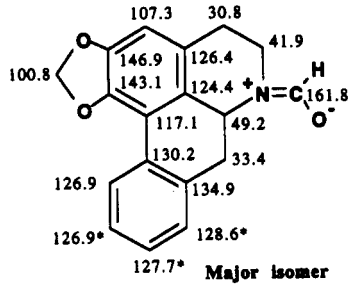
$C_{18}H_{15}O_3N$ 293.1051

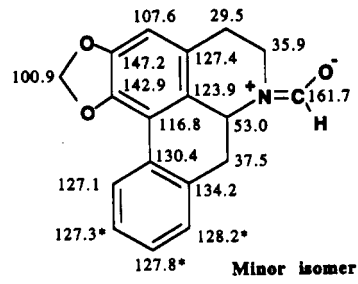
Ir: (KBr) 2870, 1655, 1565, 1490, 1425, 1395, 1280, 1225, 1220, 1200, 1180, 1145, 1075, 1040, 935, 910, 850, 780, 740, 730, 640 (215)

^{1}H nmr: (400 MHz) (215); *J* values available in (215)

^{13}C nmr: (215)

*See note given for compound **547**





253. NORLIRIDININE

$C_{18}H_{19}O_3N$ 297.1364

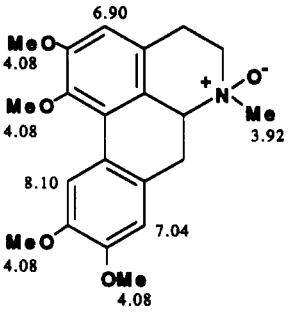
$[\alpha]_D$: −65° (*c*=0.13, MeOH) (227)

275. NORLIRIOFERINE

$C_{19}H_{21}O_4N$ 327.1469

$[\alpha]_D$: +58° (*c*=0.1, MeOH) (282)

276. GLAUCINE *N*-OXIDE

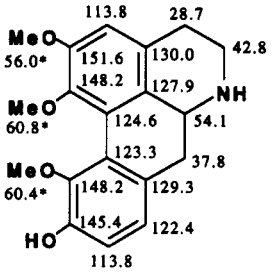


$C_{21}H_{25}O_5N$ 371.1731
[α]D: +123° (*c*=0.1, MeOH) (187)
Uv: 220(4.41), 282(4.02), 306(3.84)(187)
^{1}H nmr: (CF_3COOH, 60 MHz) (187)
Ms: 371 (M^+), 355, 354, 340, 324, 312, 297, 281, 269, 265, 165, 152, 139 (187)

279. *N*-METHYLCALYCININE

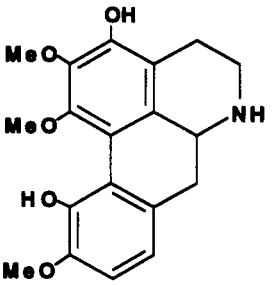
$C_{19}H_{19}O_4N$ 325.1313
[α]D: −130° (*c*=0.3, $CHCl_3$) (47)

286. HERNAGINE



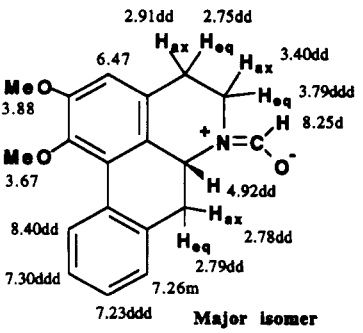
$C_{19}H_{21}O_4N$ 327.1469
^{13}C nmr: (221)

294. DANGUYELLINE



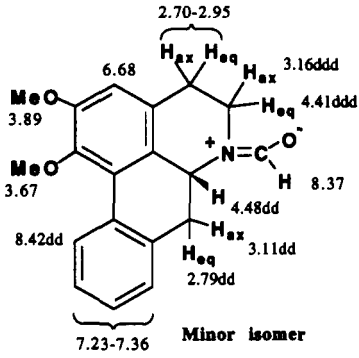
$C_{19}H_{21}O_5N$ 343.1418
^{1}H nmr: (127)

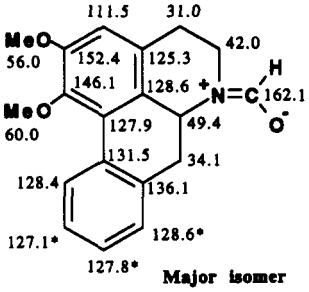
396. *N*-FORMYLNORNUCIFERINE*
(Tinocrispicine)

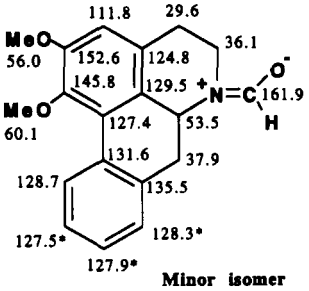


$C_{19}H_{19}O_3N$ 309.1364
Mp: 140° (215)
[α]D: −414° ($CHCl_3$) (215)
Ir: (KBr) 2930, 1660, 1590, 1425, 1400, 1320, 1260, 1240, 1150, 1110, 1040, 905, 795, 765, 650 (215)
^{1}H nmr: (400 MHz) (215); *J* values available in (215)
^{13}C nmr: (215)
Ms: 309 (M^+, 63), 264 (8), 252 (19), 251 (100), 237 (6), 236 (3), 235 (4), 208 (3), 207 (3), 194 (2), 178 (3), 165 (4) (215)

*See note given for compound **547**



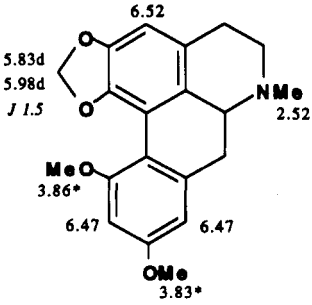




400. 1,2-DIMETHOXY-9-HYDROXYAPORPHINE

$C_{19}H_{21}O_3N$ 311.1520
[α]D: +39° (*c*=0.3, MeOH) (269)
Ms: 311 (M^+, 65), 310 (100), 296 (51), 280 (37), 268 (24), 253 (18), 237 (33), 84 (29) (269)

411. *O,N*-DIMETHYLFISSOLDINE (*O,N*-Dimethylcalycinine, *N*-Methyldiscoguattine)

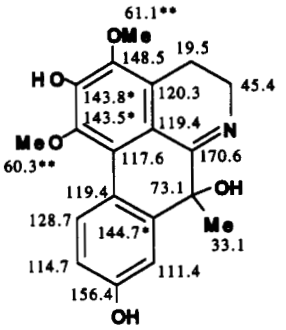


$C_{20}H_{21}O_4N$ 339.1469
[α]D: −228° (*c*=0.16, $CHCl_3$) (47)
Uv: 222 (4.25), 271sh (3.89), 279 (4.02), 300 (3.83), 319sh (3.47) (47)
Ir: (film) 1600, 1580, 1455, 1408, 1322, 1215, 1195, 1040, 940, 825, 730 (47)
^{1}H nmr: (80 MHz) (47); also in C_5D_5N (47)
Ms: 339 (M^+, 100), 338 (90), 324 (13), 310 (14), 309 (40), 308 (15), 296 (46), 295 (12), 294 (13), 280 (8), 266 (15), 238 (14) (47)

7-Hydroxy-7-methylaporphines

425. ISOGUATTOUREGIDINE

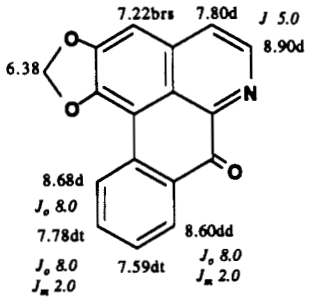
$C_{19}H_{19}O_5N$ 341.1262
^{13}C nmr: (189)



Oxoaporphines

116. LIRIODENINE

$C_{17}H_9O_3N$ 275.0582
^1H nmr: (400 MHz) (91)

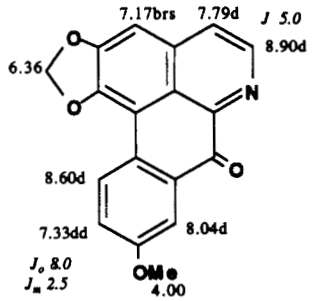


118. *O*-METHYLMOSCHATOLINE

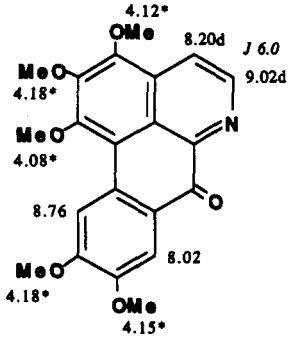
$C_{19}H_{15}O_4N$ 321.1000
Ir: (KBr) 3400, 2900, 2850, 1660, 1595, 1580, 1540, 1480, 1460, 1390, 1330, 1310, 1260, 1255, 1200, 1155, 1110, 1090, 1060, 1040, 1010, 970, 935, 905, 850, 820, 780, 760, 705 (280)
Ms: 321 (M^+, 100), 306 (41), 291 (12), 278 (19), 263 (18), 248 (7), 235 (8), 220 (13), 192 (40), 164 (9) (280)

120. LANUGINOSINE

$C_{18}H_{11}O_4N$ 305.0687
^1H nmr: (400 MHz) (91)

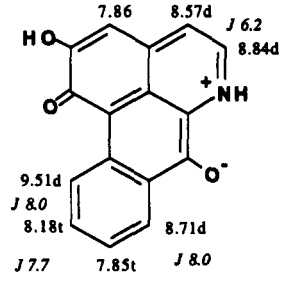


129. OXOPURPUREINE



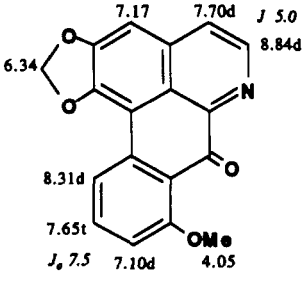
$C_{21}H_{19}O_6N$ 381.1211
Ir: (KBr) 2985, 1656, 1600, 1587, 1546, 1515, 1495, 1460, 1422, 1397, 1299, 1274, 1064, 954 (193)
^{1}H nmr: (90 MHz) (193)
Ms: 381 (M^+, 100), 366 (59), 351 (12), 338 (12), 308 (20), 280 (18), 190 (12) (193)

215. LIRIODENDRONINE



$C_{16}H_9O_3N$ 263.0582
Mp: 268–272° (dec) (214)
Uv: 258 (4.06), 306 (4,10), 432 (3.47), 576 (3.37), 584 (3.36); [(HCl) 255 (4.09), 286 (3.99), 307sh, 410 (3.47), 502 (3.24)] (214)
Ir: (KBr) 1630, 1580 (214)
^{1}H nmr: ($CDCl_3$/CF_3COOH 5%, 300 MHz) (214)
Ms: 263 (M^+, 100), 236 (7), 235 (42), 207 (7), 178 (6), 176 (6), 149 (15) (214)

216. OXOSTEPHANINE



$C_{18}H_{11}O_4N$ 305.0687
^{1}H nmr: (400 MHz) (91)

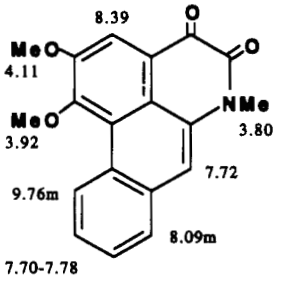
430. OXOPHOEBINE

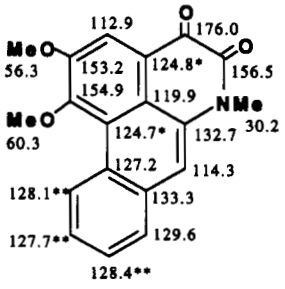
$C_{20}H_{15}O_6N$ 365.0898
Mp: 130° (67)
Uv: 214 (4.25), 251 (4.05), 279 (4.15), 324 (3.50), 384 (3.16) (67)
Ir: (KBr) 3030, 2920, 1650, 1615, 1590, 1500, 1220, 1070, 1030, 960 (67)
Ms: 365 (M^+, 100), 350 (59), 335 (21), 322 (15), 307 (34), 292 (30) (67)

4,5-Dioxoaporphines

176. CEPHARADIONE B

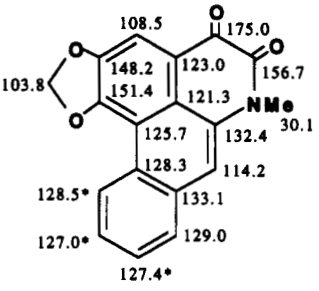
$C_{19}H_{15}O_4N$ 321.1000
^1H nmr: (C_5D_5N, 360 MHz) (1); also in DMSO-d_6 at 500 MHz (77)
^{13}C nmr: (C_5D_5N) (1); also in $CDCl_3$ (1)





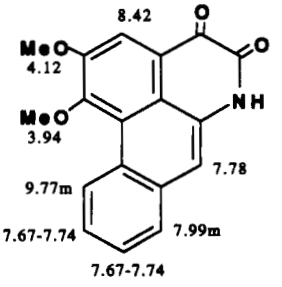
177. CEPHARADIONE A

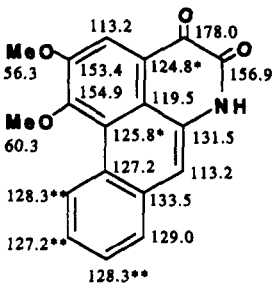
$C_{18}H_{11}O_4N$ 305.0687
^{13}C nmr: (C_5D_5N) (1)



242. NORCEPHARADIONE B

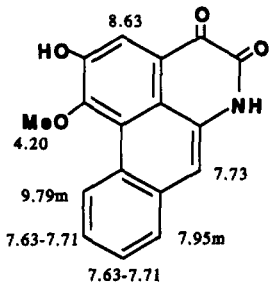
$C_{18}H_{13}O_4N$ 307.0844
^1H nmr: (C_5D_5N, 360 MHz) (1); also in DMSO-d_6 at 100 MHz (77)
^{13}C nmr: (C_5D_5N) (1)
Ms: 307 (M^+, 100), 279 (30), 264 (10), 236 (10), 221 (10), 193 (13), 181 (11), 165 (11), 164 (13) (1)

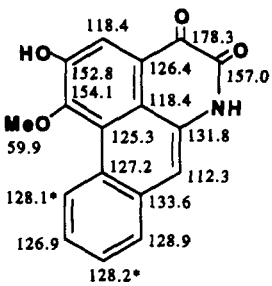




348. 4,5-DIOXODEHYDROASIMILOBINE
(Noraristolodione)

$C_{17}H_{11}O_4N$ 293.0687
^1H nmr: (C_5D_5N, 360 MHz) (1)
^{13}C nmr: (C_5D_5N) (1)
Ms: 293 (M^+, 100), 279 (18), 265 (22), 264 (11), 250 (41), 222 (17), 166 (21), 164 (10) (1)





354. DIHYDROPONTEVEDRINE*

$C_{21}H_{21}O_6N$ 383.1367
Mp: 251–253° (66)
Uv: 244 (4.58), 312 (4.26), 325 (4.37) 470 (4.00) (66)
Ms: 383 (M^+, 4), 381 (100), 367 (35), 353 (17), 338 (26), 336 (36), 295 (9), 229 (11), 177 (18), 94 (19) (66)

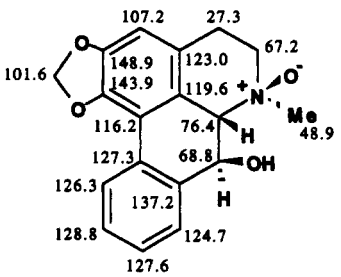
*Pseudobase-iminium equilibrium

433. ARISTOLODIONE
(Piperadione)

$C_{18}H_{13}O_4N$ 307.0844
Mp: 273–276° (dec) (77)
Ir: (KBr) 3160, 1670, 1650 (77)

C-7 and/or C-4 Oxygenated Aporphines

223. OLIVEROLINE β-*N*-OXIDE



$C_{18}H_{17}O_4N$ 311.1156
^{13}C nmr: (282)
Ms: 311 (M^+, 6), 295 (100), 294 (72), 278 (46), 277 (24), 252 (87), 236 (30) (282)

441. USHINSUNINE β-*N*-OXIDE

$C_{18}H_{17}O_4N$ 311.1156
Mp: 179–181° (298)
Uv: 272 (4.27), 282sh (4.13), 318 (3.53) (298)
Ir: 3400, 1600, 1500, 1043, 960, 937 (298)

Dehydroaporphines

457. DEHYDRONORNUCIFERINE

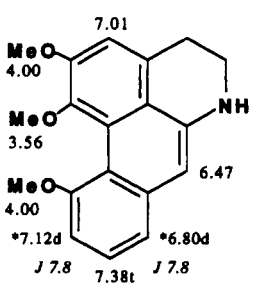
$C_{18}H_{17}O_2N$ 279.1258
Ms: 279 (M^+, 100), 264 (36), 236 (25), 220 (32) (131)

459. DEHYDROANONAINE

$C_{17}H_{13}O_2N$ 263.0946
Ms: 263 (M^+, 100), 248 (17), 232 (12) (131)

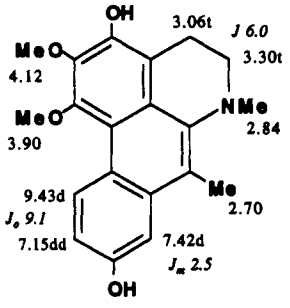
464. 1,2,11-TRIMETHOXY-DEHYDRONORAPORPHINE (Nororientidine)

$C_{19}H_{19}O_3N$ 309.1364
^1H nmr: (250 MHz) (12)



7-Methyl- or 7-Formyldehydroaporphines

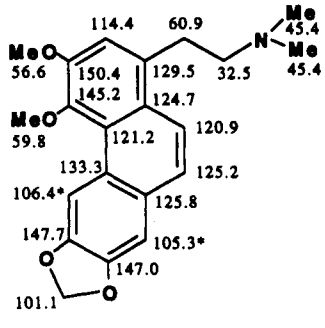
479. GOUDOTIANINE



$C_{20}H_{21}O_4N$ 339.1469
Mp: 186–188° (40)
Uv: 220 (4.45), 267 (4.85), 285sh (4.50), 323 (4.08) (41)
Ir: (KBr) 3480, 2940, 1605, 1490, 1420, 1400, 1220, 1200 (40)
^{1}H nmr: (250 MHz) (41)
^{13}C nmr: 153.6(s,2C), 148.6(s), 143.5(s), 139.6 (s), 134.5 (s), 128.6 (d), 122.6 (s, 2C), 122.0(s), 118.5(s), 114.6(d), 112.9(s), 108.2 (d), 61.3 (q), 59.7 (q), 48.7 (t), 42.2 (q), 17.4 (t), 13.8 (q) (41)

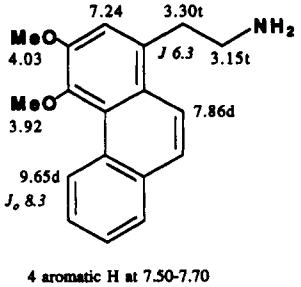
Phenanthrenes

169. THALICTHUBERINE



$C_{21}H_{23}O_4N$ 353.1626
^{13}C nmr: (22,118)

378. BISNORATHEROSPERMININE

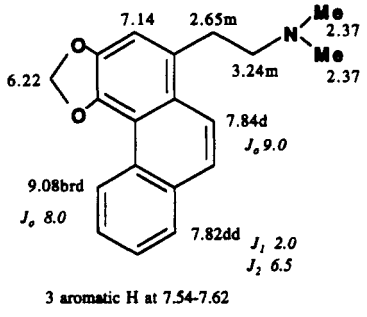


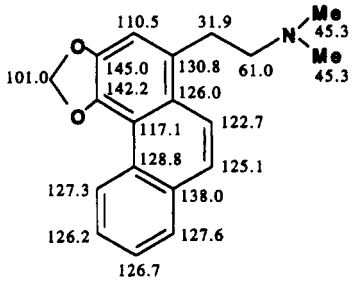
4 aromatic H at 7.50-7.70

$C_{18}H_{19}O_2N$ 281.1415
^{1}H nmr: (250 MHz) (87)
Ms: 281 (M^+, 36), 252 (90), 251 (100), 227 (23) (87)

483. STEPHENANTHRINE
(Roemerine methine)

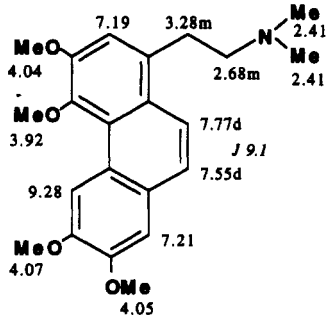
$C_{19}H_{19}O_2N$ 293.1415
^1H nmr: (360 MHz) (1)
^{13}C nmr: (1)





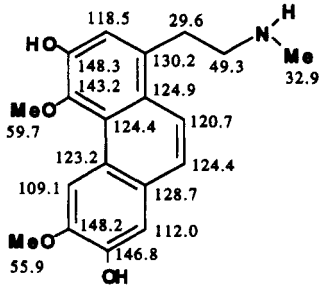
487. GLAUCINE METHINE
(*N*-Methylsecoglaucine)

$C_{22}H_{27}O_4N$ 369.1940
Uv: 269 (4.41), 285sh (3.90), 322 (3.67), 349 (2.56), 367 (2.54) (266)
Ir: (KBr) 3000–2750, 1585, 1515, 1470, 1265, 1240, 1110 (266)
^1H nmr: (250 MHz); H-9 and H-10 chemical shifts have been assigned by nOe experiment and are reversed from those given in (105) (266).
^{13}C nmr: 150.2 (s), 148.7 (s), 148.3 (s), 144.7 (s), 133.3 (s), 128.1 (s), 125.5 (s), 124.6 (d), 124.3 (s), 120.6 (d), 113.9 (d), 108.9 (d), 107.7 (d), 60.8 (t), 59.8 (q), 56.3 (q), 55.51 (q), 55.46 (q), 45.2 (q), 32.3 (t) (22)
Ms: 369 (M^+, 66), 311 (17), 279 (13), 149 (20), 58 (100) (266)



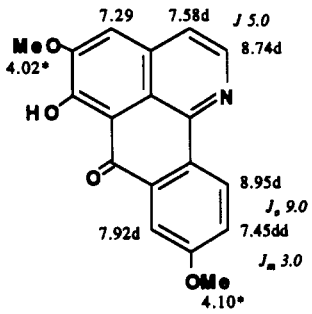
490. SECOBOLDINE

$C_{19}H_{21}O_4N$ 327.1469
^1H nmr: (DMSO-d_6) (164)
^{13}C nmr: (DMSO-d_6) (164)



Miscellaneous

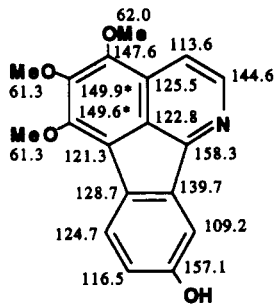
383. 6-HYDROXY-5,9-DIMETHOXYOXOISOAPORPHINE
(6-*O*-Demethylmenisporphine*)



$C_{18}H_{13}O_4N$ 307.0844
Mp: 248–249° (153)
Uv: 238sh (4.38), 254 (4.62), 292sh (3.76), 307 (3.53), 319 (3.44), 358sh (3.77), 366 (3.79), 406sh (3.51), 430 (3.83), 455 (3.84) (153)
Ir: (KBr) 3422, 1630 (257)
^{1}H nmr: (200 MHz) (153)
Ms: 307 (M^+, 100), 289, 278, 261, 235, 218, 206, 190, 178, 164 (257)

*Erroneously named 7-*O*-demethylmenisporphine in (104)

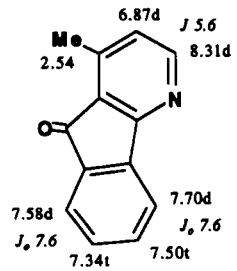
388. NORRUFESCINE*
(9-*O*-Demethylrufescine)

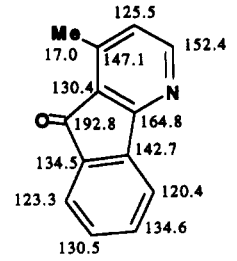


$C_{18}H_{15}O_4N$ 309.1000
Ir: (KBr) 3450, 2950, 1610, 1595, 1480, 1470, 1400, 1380, 1330, 1295, 1260, 1240, 1100, 1010, 890, 830 (201)
^{13}C nmr: (DMSO-d_6) (201)
Ms: 309 (M^+, 100), 294 (65), 251 (45), 208 (38), 180 (35) (201)

*In (201) norrufescine has been wrongly spelled "norruffscine"

498. ONYCHINE



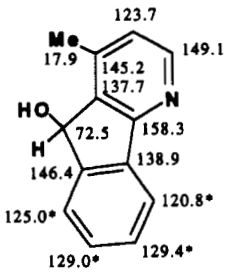


$C_{13}H_9ON$ 195.0684
^{1}H nmr: (360 MHz)* (36)
^{13}C nmr: (36)

*Assignments reported in (105) for H-5 and H-8 have to be reversed. ^{1}H- and ^{13}C-nmr data assignments, determined by COLOC experiment, are different from those given in (123).

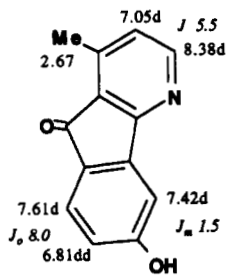
499. DIHYDROONYCHINE

$C_{13}H_{11}ON$ 197.0840
^{13}C nmr: (123)



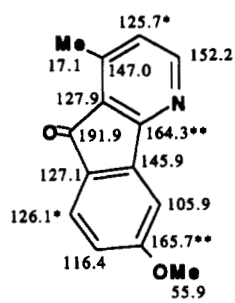
500. 6-HYDROXYONYCHINE

$C_{13}H_9O_2N$ 211.0633
Mp: 312° (256)
Uv: 204 (3.96), 240sh (4.08), 246 (4.13), 272sh (3.93), 284 (4.01), 295 (3.96), 332 (3.23), 343 (3.19), 390sh (2.93); [(HCl) 204, 240sh, 246, 272sh, 284, 295, 308sh, 346] (256)
^1H nmr: (250 MHz) (158); also in CD_3OD, 200 MHz (256)
Ms: 211 (M^+, 100), 210 (4), 183 (19), 182 (5), 155 (7), 154 (12), 128 (5), 127 (6), 126 (4), 105.5 (8), 82 (9), 64 (23) (256)



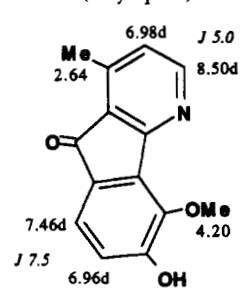
502. 6-METHOXYONYCHINE

$C_{14}H_{11}O_2N$ 225.0789
^{13}C nmr: (36)



505. URSULINE
(Oxylopine, revised structure)

$C_{14}H_{11}O_3N$ 241.0738
Mp: 158–160° (26)
Uv: 206 (4.08), 244sh (4.22), 252 (4.29), 265 (4.02), 291 (4.00), 302 (3.98), 360 (3.38); [(HCl) 206, 244sh, 252, 265sh, 291sh, 304, 316sh, 360] (158)
Ir: (film) 2920, 1705, 1600, 1565, 1480, 1430, 1400, 1370, 1330, 1270, 1230, 1210, 1105, 1070, 1030, 960, 935, 875, 835, 800, 730, 695 (158)
^1H nmr: (250 MHz) (158); also in C_5D_5N at 250 MHz (158); also in DMSO-d_6 at 90 MHz (26)
Ms: 241 (M^+, 100), 223 (61), 212 (44), 195 (34), 183 (31) (158)

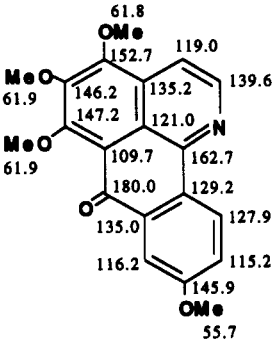


508. MACONDINE

$C_{14}H_{11}O_3N$ 241.0738
^1H nmr: (C_5D_5N, 250 MHz) (158)

529. DAURIPORPHINE
(Bianfugenine)

$C_{20}H_{17}O_5N$ 321.1105
^{13}C nmr: (60)



531. EUPOLAURIDINE *N*-OXIDE

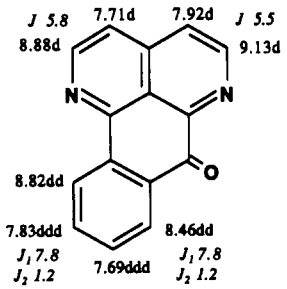
$C_{14}H_8ON_2$ 220.0636
Ir: (KBr) 1570, 1445, 1295, 1245, 1235, 845, 810, 755, 620 (33)

532. EUPOLAURIDINE DI-*N*-OXIDE

$C_{14}H_8O_2N_2$ 236.0585
Mp: 225–227° (33)
Ir: (KBr) 1610, 1465, 1315, 1240, 1140, 790, 755 (33)

533. SAMPANGINE

$C_{15}H_8ON_2$ 232.0636
Mp: 220–222° (219)
Uv: 229 (4.50), 249 (4.26), 306 (3.74), 325 (3.66), 390 (3.84) (29)
^1H nmr: (300 MHz) (219)
^{13}C nmr: (219)



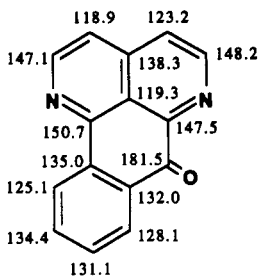


TABLE 3. Known Aporphinoids Reisolated from Botanical Sources or by Synthesis.

Aporphines *sensu stricto*

1. CAAVERINE $C_{17}H_{17}O_2N$ 267.1258
SOURCES: Annonaceae: *Neostenanthera gabonensis* (227)
Magnoliaceae: *Liriodendron tulipifera* (310)
Rhamnaceae: *Ziziphus vulgaris* var. *spinosus* (110,112,113)

2. LIRINIDINE $C_{18}H_{19}O_2N$ 281.1415
SOURCES: Annonaceae: *Neostenanthera gabonensis* (227)
Magnoliaceae: *Liriodendron tulipifera* (310)
Nelumbonaceae: *Nelumbo nucifera* (243)

3. ASIMILOBINE $C_{17}H_{17}O_2N$ 267.1258
SOURCES: Annonaceae: *Annona cherimolia* (245,300), *Annona paludosa* (157), *Annona reticulata* (294,297), *Artabotrys monteiroae* (139), *Artabotrys odoratissimus* (115), *Cardiopetalum calophyllum* (238), *Disepalum pulchrum* (159), *Monocyclanthus vignei* (1), *Oncodostigma monosperma* (26), *Polyalthia stenopetala* (159), *Polyalthia suberosa* (91), *Rollinia pickelli* (75)
Lauraceae: *Phoebe formosana* (165)
Magnoliaceae: *Talauma betongensis* (170)
Menispermaceae: *Stephania pierrei* (175)
Monimiaceae: *Siparuna griseo-flavescens* (181), *Siparuna tonduziana* (180)
Nelumbonaceae: *Nelumbo nucifera* (243)

4. *N*-METHYLASIMILOBINE $C_{18}H_{19}O_2N$ 281.1415
SOURCES: Annonaceae: *Annona cherimolia* (245), *Monocyclanthus vignei* (1), *Oxymitra velutina* (2)
Rhamnaceae: *Ziziphus vulgaris* var. *spinosus* (110,112,113)

5. NORNUCIFERINE $C_{18}H_{19}O_2N$ 281.1415
SOURCES: Annonaceae: *Artabotrys maingayi* (64), *Guatteria diospyroides* (182), *Oncodostigma monosperma* (26), *Trivalvaria macrophylla* (63)
Lauraceae: *Neolitsea konishii* (166)
Magnoliaceae: *Liriodendron tulipifera* (310)
Rhamnaceae: *Ziziphus jujuba* var. *inermis* (111), *Ziziphus vulgaris* var. *spinosus* (112,113,209)

6. NUCIFERINE $C_{19}H_{21}O_2N$ 295.1571
SOURCES: Annonaceae: *Annona cherimolia* (245)
Magnoliaceae: *Liriodendron tulipifera* (310)
Menispermaceae: *Cissampelos pareira* (6)
Nelumbonaceae: *Nelumbo nucifera* (273)
Rhamnaceae: *Ziziphus vulgaris* var. *spinosus* (112,113,209)

7. ANONAINE $C_{17}H_{15}O_2N$ 265.1102
SOURCES: Annonaceae: *Annona cherimolia* (230,245,300), *Annona paludosa* (157), *Annona reticulata* (297), *Annona salzmanii* (73), *Annona squamosa* (301), *Artabotrys maingayi* (64), *Artabotrys monteiroae* (139), *Cananga odorata* (298,299), *Cardiopetalum calophyllum* (238), *Disepalum pulchrum* (159), *Guatteria oliviformis* (179), *Oncodostigma monosperma* (26), *Polyalthia longifolia* (282), *Rollinia pickelli* (75), *Trivalvaria macrophylla* (63)
Magnoliaceae: *Talauma gitingensis* (207)
Menispermaceae: *Stephania pierrei* (175)
Monimiaceae: *Siparuna tonduziana* (180)

8. ROEMERINE $C_{18}H_{17}O_2N$ 279.1258
SOURCES: Annonaceae: *Guatteria oliviformis* (179)
Magnoliaceae: *Liriodendron tulipifera* (310)
Menispermaceae: *Stephania discifiora* (264), *Stephania excentrica* (70), *Stephania lincangensis* (56), *Stephania yunnanensis* (57)

Papaveraceae: *Papaver confine* (250), *Papaver dubium* (250), *Papaver fugax* (52), *Papaver rhoeas* (133), *Papaver rhopalothece* (237)

9. ROEMREFIDINE $C_{19}H_{20}O_2N^+$ 294.1493
(Remrefidine, *N*-methylroemerine)
SOURCES: Menispermaceae: *Anisocycla cymosa* (134,135)
Papaveraceae: *Papaver dubium* (250)

12. STEPHANINE $C_{19}H_{19}O_3N$ 309.1364
SOURCES: Menispermaceae: *Stephania brachyandra* (218), *Stephania yunnanensis* (57), *Stephania yunnanensis* var. *trichocalyx* (55)

16. ANOLOBINE $C_{17}H_{15}O_3N$ 281.1051
SOURCES: Annonaceae: *Annona cherimolia* (245,300), *Guatteria goudotiana* (41), *Guatteria tonduzii* (179), *Xylopia vieillardi* (132)
Magnoliaceae: *Talauma betongensis* (170)

17. ROEMEROLINE $C_{18}H_{17}O_3N$ 295.1207
(*N*-Methylanolobine)
SOURCES: Annonaceae: *Guatteria tonduzii* (179)
Menispermaceae: *Stephania pierrei* (175)
Papaveraceae: *Papaver fugax* (52)

18. XYLOPINE $C_{18}H_{17}O_3N$ 295.1207
SOURCES: Annonaceae: *Annona cherimolia* (245), *Fissistigma oldhamii* (280), *Xylopia vieillardi* (132)
Magnoliaceae: *Talauma gitengensis* (207)
Menispermaceae: *Stephania pierrei* (175)

19. ISOLAURELINE $C_{19}H_{19}O_3N$ 309.1364
SOURCES: Annonaceae: *Desmos dasymaschalus* (109)
Menispermaceae: *Stephania pierrei* (175), *Stephania yunnanensis* var. *trichocalyx* (55)

21. APOGLAZIOVINE $C_{18}H_{19}O_3N$ 297.1364
SOURCES: Lauraceae: *Aniba canelilla* (209), *Nectandra membranacea* (46)
Magnoliaceae: *Liriodendron tulipifera* (310)

31. ISOTHEBAINE $C_{19}H_{21}O_3N$ 311.1520
SOURCES: Papaveraceae: *Papaver bracteatum* (236), *Papaver orientale* (249)

38. CREBANINE $C_{20}H_{21}O_4N$ 339.1469
SOURCES: Menispermaceae: *Stephania brachyandra* (218), *Stephania dentifolia* (55), *Stephania hainanensis* (90), *Stephania officinarum* (89), *Stephania succifera* (58), *Stephania yunnanensis* var. *trichocalyx* (55), *Stephania zippeliana* (51), *Stephania* sp. (232)

39. LAURELLIPTINE $C_{18}H_{19}O_4N$ 313.1313
(Norisoboldine)
SOURCES: Annonaceae: *Annona salzmanii* (73), *Artabotrys monteiroae* (139)
Lauraceae: *Ocotea caesia* (272)

40. ISOBOLDINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Annona cherimolia* (245), *Annona salzmanii* (73), *Cardiopetalum calophyllum* (238), *Guatteria goudotiana* (41), *Xylopia vieillardi* (132)
Aristolochiaceae: *Aristolochia papilaris* (167)
Berberidaceae: *Berberis valdiviana* (270)
Fumariaceae: *Ceratocapnos palaestinus* (119), *Corydalis bungeana* (277), *Corydalis caucasica* (71, 239), *Corydalis claviculata* (9), *Corydalis intermedia* (247), *Corydalis nobilis* (247), *Corydalis rutifolia* ssp. *erdelii* (240), *Corydalis solida* (96a), *Corydalis solida* ssp. *brachyloba* (241), *Sarcocapnos crassifolia* ssp. *speciosa* (42)
Lauraceae: *Aniba canelilla* (209), *Litsea cubeba* (162), *Nectandra grandiflora* (200), *Nectandra membranacea* (46,117), *Neolitsea konishii* (166), *Ocotea caesia* (272)

Menispermaceae: *Stephania excentrica* (70), *Stephania officinarum* (89)
Papaveraceae: *Glaucium arabicum* (7), *Glaucium flavum* (66), *Papaver orientale* (249), *Papaver rhoeas* var. *chelidonioides* (250), *Stylophorum lasiocarpum* (246)
Ranunculaceae: *Thalictrum aquilegifolium* (17), *Thalictrum collinum* (143,144)
Synthesis (106)

42. BRACTEOLINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Papaveraceae: *Papaver orientale* (249)

43. WILSONIRINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Artabotrys monteiroae* (139)

44. THALIPORPHINE $C_{20}H_{23}O_4N$ 341.1626
(Thalicmidine, *O*-methylisoboldine)
SOURCES: Fumariaceae: *Ceratocapnos palaestinus* (119), *Platycapnos spicata* (24)
Magnoliaceae: *Liriodendron tulipifera* (122)
Papaveraceae: *Glaucium arabicum* (7)
Ranunculaceae: *Thalictrum buschianum* (144), *Thalictrum ichengense* (291,292), *Thalictrum minus* (223)
Synthesis (106)

46. FAGARA BASE $C_{21}H_{26}O_4N^+$ 356.1861
(*N*-Methylthaliporphine)
SOURCES: Rutaceae: *Fagara tingoassuiba* (194)

47. NORDOMESTICINE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Lauraceae: *Ocotea sinuata* (44,45)

48. DOMESTICINE $C_{19}H_{19}O_4N$ 325.1313
SOURCES: Fumariaceae: *Corydalis stewartii* (126), *Platycapnos spicata* (22,24)

49. LAUROLITSINE $C_{18}H_{19}O_4N$ 313.1313
(Norboldine)
SOURCES: Annonaceae: *Trivalvaria macrophylla* (63)
Lauraceae: *Dehaasia kurzii* (15), *Lindera myrrha* (221), *Litsea cubeba* (162), *Litsea deccanensis* (108), *Litsea gardneri* (16), *Nectandra grandiflora* (200), *Neolitsea konishii* (166)
Monimiaceae: *Peumus boldus* (253)

50. BOLDINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Trivalvaria macrophylla* (63)
Lauraceae: *Dehaasia kurzii* (116), *Litsea cubeba* (162,287), *Litsea deccanensis* (108), *Nectandra grandiflora* (200), *Neolitsea konishii* (166)

52. PREDICENTRINE $C_{20}H_{23}O_4N$ 341.1626
SOURCES: Fumariaceae: *Corydalis solida* (96a), *Platycapnos spicata* (24)
Magnoliaceae: *Aromadendron elegans* (99), *Liriodendron tulipifera* (122)
Menispermaceae: *Strychnopsis thouarsii* (226)

53. ISODOMESTICINE $C_{19}H_{19}O_4N$ 325.1313
SOURCES: Annonaceae: *Guatteria goudotiana* (41)
Fumariaceae: *Platycapnos spicata* (24)
Lauraceae: *Litsea cubeba* (162)

54. LAUROTETANINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Guatteria goudotiana* (41)
Lauraceae: *Actinodaphne speciosa* (16), *Litsea cubeba* (162), *Nectandra grandiflora* (200), *Neolitsea konishii* (166), *Phoebe formosana* (165)
Menispermaceae: *Cyclea atjehensis* (259)
Monimiaceae: *Siparuna tonduziana* (180)

55. *N*-METHYLLAUROTETANINE $C_{20}H_{23}O_4N$ 341.1626

SOURCES: Annonaceae: *Guatteria goudotiana* (41)
Fumariaceae: *Corydalis caucasica* (71), *Platycapnos spicata* (22,24), *Sarcocapnos crassifolia* ssp. *speciosa* (42)
Lauraceae: *Actinodaphne speciosa* (16), *Lindera pipericarpa* (155), *Litsea cubeba* (162,287), *Neolitsea konishii* (166)
Magnoliaceae: *Liriodendron tulipifera* (122)
Monimiaceae: *Siparuna griseo-flavescens* (181), *Siparuna pauciflora* (178), *Siparuna tonduziana* (180)
Papaveraceae: *Eschscholtzia californica* (101)
Synthesis (106)

56. XANTHOPLANINE $C_{21}H_{26}O_4N^+$ 356.1862
SOURCES: Lauraceae: *Dehaasia triandra* (186), *Litsea cubeba* (163)

58. NORGLAUCINE $C_{20}H_{23}O_4N$ 341.1626
SOURCES: Annonaceae: *Xylopia vieillardi* (132)
Fumariaceae: *Ceratocapnos palaestinus* (119)
Synthesis (107)

59. GLAUCINE $C_{21}H_{25}O_4N$ 355.1782
SOURCES: Fumariaceae: *Ceratocapnos palaestinus* (119), *Dactylicapnos scandens* (184), *Platycapnos saxicola* (254), *Platycapnos spicata* (22,24,254), *Platycapnos tenuiloba* ssp. *parallela* (254), *Platycapnos tenuiloba* ssp. *tenuiloba* (254), *Sarcocapnos baetica* ssp. *baetica* (43), *Sarcocapnos baetica* ssp. *integrifolia* (43), *Sarcocapnos crassifolia* ssp. *speciosa* (42), *Sarcocapnos enneaphylla* (266), *Sarcocapnos saetabensis* (23)
Magnoliaceae: *Liriodendron tulipifera* (122,310)
Papaveraceae: *Glaucium flavum* (20,66,79)
Ranunculaceae: *Thalictrum collinum* (143), *Thalictrum flavum* (271), *Thalictrum ichengense* (291,292), *Thalictrum microgynum* (274), *Thalictrum minus* (96)
Synthesis (107,156,212)

61. NORNANTENINE $C_{19}H_{19}O_4N$ 325.1313
SOURCES: Annonaceae: *Xylopia vieillardi* (132)
Menispermaceae: *Cyclea atjehensis* (259)
Monimiaceae: *Siparuna tonduziana* (180)

62. NANTENINE $C_{20}H_{21}O_4N$ 339.1469
SOURCES: Berberidaceae: *Nandina domestica* (203)
Fumariaceae: *Platycapnos spicata* (22,24,254), *Platycapnos tenuiloba* ssp. *parallela* (254), *Platycapnos tenuiloba* ssp. *tenuiloba* (254)
Lauraceae: *Dehaasia triandra* (186)
Menispermaceae: *Stephania tetrandra* (244)
Monimiaceae: *Siparuna griseo-flavescens* (181), *Siparuna pauciflora* (178), *Siparuna tonduziana* (180)
Synthesis (212)

64. ACTINODAPHNINE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Hernandiaceae: *Illigera khasiana* (302)
Lauraceae: *Actinodaphne sesquipedalis* (4), *Litsea gardneri* (16), *Neolitsea konishii* (166)
(−) enantiomer: Hernandiaceae: *Illigera parviflora* (304)

65. *N*-METHYLACTINODAPHNINE $C_{19}H_{19}O_4N$ 325.1313
(Cassythicine)
SOURCES: Menispermaceae: *Stephania tetrandra* (244)
Synthesis (252)
(−) enantiomer: Menispermaceae: *Stephania pierrei* (175)

66. PHANOSTENINE $C_{19}H_{19}O_4N$ 325.1313
SOURCES: Menispermaceae: *Stephania pierrei* (175)

67. DICENTRINE $C_{20}H_{21}O_4N$ 339.1469
SOURCES: Lauraceae: *Lindera megaphylla* (53,263), *Litsea deccanensis* (108)
Menispermaceae: *Cyclea laxiflora* (154), *Stephania brachyandra* (218), *Stephania dentifolia* (55), *Stephania disciflora* (264), *Stephania epigeae* (59), *Stephania pierrei* (175), *Stephania zippeliana* (51), *Stephania* sp. (232)

69. NEOLITSINE $C_{19}H_{17}O_4N$ 323.1156
SOURCES: Annonaceae: *Guatteria goudotiana* (41)

71. CORYTUBERINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Guatteria goudotiana* (41), *Oncodostigma monosperma* (26), *Xylopia vieillardi* (132)
Fumariaceae: *Corydalis nobilis* (247), *Corydalis semenovii* (279)
Lauraceae: *Dehaasia triandra* (186), *Litsea deccanensis* (108), *Neolitsea konishii* (166)
Menispermaceae: *Cissampelos pareira* (6), *Stephania officinarum* (89)
Papaveraceae: *Papaver albiflorum* ssp. *albiflorum* (248), *Papaver argemone* (255), *Papaver confine* (250), *Papaver dubium* (250), *Papaver orientale* (249), *Papaver rhoeas* var. *chelidonioides* (250), *Papaver* cf. *stevenianum* (248), *Stylophorum lasiocarpum* (246)

72. MAGNOFLORINE $C_{20}H_{24}O_4N^+$ 342.1704
SOURCES: Annonaceae: *Xylopia vieillardi* (132)
Aristolochiaceae: *Aristolochia bracteata* (81), *Aristolochia clematitis* (149), *Aristolochia moupinensis* (295)
Berberidaceae: *Berberis ilicifolia* (88), *Berberis polymorpha* (268), *Nandina domestica* (128)
Fumariaceae: *Corydalis intermedia* (247)
Lauraceae: *Litsea deccanensis* (108)
Magnoliaceae: *Magnolia acuminata* (137)
Menispermaceae: *Cissampelos pareira* (6), *Cocculus hirsutus* (5), *Stephania gracilenta* (141), *Stephania pierrei* (175), *Stephania tetrandra* (210), *Tiliacora triandra* (216), *Tinospora malabarica* (80)
Papaveraceae: *Glaucium arabicum* (7), *Papaver argemone* (255), *Papaver orientale* (249), *Papaver pavoninum* (255), *Papaver rhoeas* var. *chelidonioides* (250), *Stylophorum lasiocarpum* (246)
Ranunculaceae: *Asteropyrum peltatum* (188), *Isopyrum thalictroides* (150), *Ranunculus serbicus* (25), *Thalictrum collinum* (143), *Thalictrum cultratum* (95), *Thalictrum delavayi* (94), *Thalictrum foetidum* (18), *Thalictrum glandulosissimum* (183), *Thalictrum minus* (147), *Thalictrum minus* var. *majus* (145), *Thalictrum minus* var. *minus* (19), *Thalictrum sessile* (289)
Rutaceae: *Zanthoxylum anodynum* (192)

73. NORCORYDINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Trivalvaria macrophylla* (63)

74. CORYDINE $C_{20}H_{23}O_4N$ 341.1626
SOURCES: Annonaceae: *Annona cherimolia* (245)
Fumariaceae: *Dactylicapnos scandens* (184)
Lauraceae: *Lindera myrrha* (221)
Menispermaceae: *Cissampelos fasciculata* (93), *Stephania lincangensis* (56), *Stephania macrantha* (55), *Stephania zippeliana* (51)
Papaveraceae: *Glaucium flavum* (66), *Papaver confine* (250), *Papaver pavonimum* (255), *Papaver* cf. *stevenianum* (248)
Ranunculaceae: *Aconitum orientale* (191)

76. HERNOVINE $C_{18}H_{19}O_4N$ 313.1313
SOURCES: Hernandiaceae: *Illigera parviflora* (304)
Lauraceae: *Lindera myrrha* (221)

79. *N*-METHYLLINDCARPINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Lauraceae: *Litsea cubeba* (162)
Menispermaceae: *Strychnopsis thouarsii* (226)

84. NORISOCORYDINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Fumariaceae: *Corydalis caucasica* (71)
Lauraceae: *Aniba canelilla* (209), *Dehaasia incrassata* (234), *Lindera pipericarpa* (155), *Litsea cubeba* (162)
Rhamnaceae: *Ziziphus vulgaris* var. *spinosus* (110,112,113)

85. ISOCORYDINE $C_{20}H_{23}O_4N$ 341.1626
SOURCES: Annonaceae: *Guatteria oliviformis* (179)
Fumariaceae: *Corydalis lutea* (296), *Corydalis solida* (96a), *Dactylicapnos torulosa* (303), *Sarcocapnos enneaphylla* (266), *Sarcocapnos saetabensis* (23)
Lauraceae: *Dehaasia incrassata* (234), *Dehaasia triandra* (186), *Lindera pipericarpa* (155), *Litsea cubeba* (162,287), *Litsea deccanensis* (108), *Ocotea holdridgeiana* (previously *Phoebe tonduzii*) (44)
Menispermaceae: *Stephania cepharantha* (69), *Stephania disciflora* (264), *Stephania dolichopoda* (55), *Stephania lincangensis* (56), *Stephania macrantha* (55), *Stephania officinarum* (89), *Stephania pierrei* (258), *Stephania yunnanensis* var. *trichocalyx* (55), *Stephania* sp. (232), *Strychnopsis thouarsii* (226)
Monimiaceae: *Siparuna griseo-flavescens* (181)
Papaveraceae: *Glaucium flavum* (66), *Papaver confine* (250), *Papaver pavoninum* (255), *Papaver rhoeas* (133), *Papaver rhopalothece* (237), *Papaver* cf. *stevenianum* (248)
Ranunculaceae: *Thalictrum delavayi* (94), *Thalictrum pedunculatum* (127)

88. *O,O*-DIMETHYLCORYTUBERINE $C_{21}H_{25}O_4N$ 355.1782
(*O*-Methylpraecoxine)
SOURCES: Lauraceae: *Ocotea holdridgeiana* (previously *Phoebe tonduzii*) (44)

89. NANDIGERINE $C_{18}H_{17}O_4N$ 311.1156
(Hernangerine)
SOURCES: Lauraceae: *Lindera myrrha* (221)

90. *N*-METHYLHERNANGERINE $C_{19}H_{19}O_4N$ 325.1313
(*N*-Methylnandigerine)
SOURCES: Lauraceae: *Lindera megaphylla* (53)

91. LAUNOBINE $C_{18}H_{17}O_4N$ 311.1156
(Norbulbocapnine)
SOURCES: Hernandiaceae: *Illigera khasiana* (302)

92. BULBOCAPNINE $C_{19}H_{19}O_4N$ 325.1313
(*N*-Methyllaunobine)
SOURCES: Fumariaceae: *Corydalis caucasica* (71,239), *Corydalis cava* (220), *Corydalis hsuchowensis* (308), *Corydalis integra* (8), *Corydalis intermedia* (247), *Corydalis rutifolia* ssp. *erdelii* (240), *Corydalis solida* (96a), *Corydalis solida* ssp. *brachyloba* (241)
Hypecoaceae: *Hypecoum imberbe* (213)
Menispermaceae: *Cissampelos pareira* (6)
Synthesis (252)

94. OVIGERINE $C_{18}H_{15}O_4N$ 309.1000
SOURCES: Lauraceae: *Lindera myrrha* (221)

100. THALICSIMIDINE $C_{22}H_{27}O_5N$ 385.1889
(Purpureine, 3-methoxyglaucine)
SOURCES: Ranunculaceae: *Thalictrum flavum* (271), *Thalictrum ichengense* (291,292), *Thalictrum microgynum* (274), *Thalictrum pedunculatum* (127)
Synthesis (156)

102. OCONOVINE $C_{21}H_{25}O_5N$ 371.1731
SOURCES: Ranunculaceae: *Thalictrum pedunculatum* (127)

109. OCOTEINE $C_{21}H_{23}O_5N$ 369.1575
(Thalicmine)
SOURCES: Hernandiaceae: *Hernandia bivalvis* (251)
Ranunculaceae: *Thalictrum delavayi* (94)

111. HERNANDINE $C_{19}H_{19}O_3N$ 341.1260
SOURCES: Hernandiaceae: *Hernandia bivalvis* (251)
Lauraceae: *Lindera myrrha* (221)
Synthesis (235)

181. *N*-ACETYLNORNUCIFERINE $C_{20}H_{21}O_3N$ 323.1520
SOURCES: Aristolochiaceae: *Aristolochia bracteata* (48)
Magnoliaceae: *Aromadendron elegans* (99)
Menispermaceae: *Tinospora crispa* (215)

183. *N*-ACETYLANONAINE $C_{19}H_{17}O_3N$ 307.1207
SOURCES: Magnoliaceae: *Aromadendron elegans* (99)
Synthesis (207)

184. ISOPILINE $C_{18}H_{19}O_3N$ 297.1364
SOURCES: Annonaceae: *Guatteria diospyroides* (182), *Neostenanthera gabonensis* (227)

185. *N*-METHYLISOPILINE $C_{19}H_{21}O_3N$ 311.1520
SOURCES: Annonaceae: *Neostenanthera gabonensis* (227)

187. 3-HYDROXYNUCIFERINE $C_{19}H_{21}O_3N$ 311.1520
SOURCES: Lauraceae: *Ocotea holdridgeiana* (previously *Phoebe tonduzii*) (44)

188. *O*-METHYLISOPILINE $C_{19}H_{21}O_3N$ 311.1520
(*O*-Methylnorlirinine)
SOURCES: Annonaceae: *Guatteria diospyroides* (182), *Neostenanthera gabonensis* (227)

189. 3-METHOXYNUCIFERINE $C_{20}H_{23}O_3N$ 325.1677
(*O*-Methyllirinine)
SOURCES: Lauraceae: *Ocotea holdridgeiana* (previously *Phoebe tonduzii*) (44)

190. TULIFEROLINE $C_{21}H_{23}O_4N$ 353.1626
SOURCES: Magnoliaceae: *Liriodendron tulipifera* (204)

191. NORSTEPHALAGINE $C_{18}H_{17}O_3N$ 295.1207
SOURCES: Annonaceae: *Artabotrys grandifolius* (50), *Artabotrys maingayi* (64), *Guatteria foliosa* (189)

192. ZENKERINE $C_{18}H_{19}O_3N$ 297.1364
SOURCES: Lauraceae: *Ocotea caesia* (272)

193. PULCHINE $C_{19}H_{21}O_3N$ 311.1520
(*N*-Methylzenkerine)
SOURCES: Lauraceae: *Ocotea caesia* (272)

198. ELMERRILLICINE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Annonaceae: *Guatteria foliosa* (189)

199. LIRIOTULIPIFERINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Lauraceae: *Litsea cubeba* (287)
Magnoliaceae: *Liriodendron tulipifera* (122)
Menispermaceae: *Strychnopsis thouarsii* (226)

200. NORISODOMESTICINE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Annonaceae: *Guatteria goudotiana* (41)

203. LITSEFERINE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Hernandiaceae: *Illigera parviflora* (304)

204. NORDICENTRINE $C_{19}H_{19}O_4N$ 325.1313
SOURCES: Lauraceae: *Litsea deccanensis* (294)
(−)-enantiomer: Menispermaceae: *Stephania pierrei* (175)

207. NOROCONOVINE $C_{20}H_{23}O_5N$ 357.1575
SOURCES: Ranunculaceae: *Thalictrum pedunculatum* (127)

212. LEUCOXYLONINE $C_{22}H_{25}O_6N$ 399.1680
SOURCES: Ranunculaceae: *Thalictrum delavayi* (94)

251. *N*-FORMYLANONAINE $C_{18}H_{15}O_3N$ 293.1051
SOURCES: Menispermaceae: *Tinospora crispa* (215), *Tinospora malabarica* (13)

253. NORLIRIDININE $C_{18}H_{19}O_3N$ 297.1364
SOURCES: Annonaceae: *Disepalum pulchrum* (159), *Neostenanthera gabonensis* (227)

254. 3-HYDROXYNORNUCIFERINE $C_{18}H_{19}O_3N$ 297.1364
SOURCES: Annonaceae: *Annona reticulata* (297), *Artabotrys maingayi* (64), *Guatteria goudotiana* (41), *Guatteria foliosa* (189)

272. STESAKINE $C_{19}H_{19}O_4N$ 325.1313
SOURCES: Menispermaceae: *Stephania zippeliana* (51)

275. NORLIRIOFERINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Annonaceae: *Polyalthia longifolia* (282)

276. GLAUCINE *N*-OXIDE $C_{21}H_{25}O_5N$ 371.1731
SOURCES: Synthesis (187)

278. CALYCININE $C_{18}H_{17}O_4N$ 311.1156
(Fissistigine A, fissoldine)
SOURCES: Annonaceae: *Fissistigma oldhamii* (280), *Xylopia vieillardi* (132)

279. *N*-METHYLCALYCININE $C_{19}H_{19}O_4N$ 325.1313
(*N*-Methylfissoldine)
SOURCES: Synthesis (47)

280. DISCOGUATTINE $C_{19}H_{19}O_4N$ 325.1313
(*O*-Methylcalycinine)
SOURCES: Synthesis (47)

286. HERNAGINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Lauraceae: *Lindera myrrha* (221)

288. ISOCORYDINE *N*-OXIDE $C_{20}H_{23}O_5N$ 357.1575
SOURCES: Synthesis (187)

396. *N*-FORMYLNORNUCIFERINE $C_{19}H_{19}O_3N$ 309.1364
(Tinocrispicine)
SOURCES: Menispermaceae: *Tinospora crispa* (215)

400. 1,2-DIMETHOXY-9-HYDROXYAPORPHINE $C_{19}H_{21}O_3N$ 311.1520
SOURCES: Berberidaceae: *Berberis hakeoides* (269)

401. ORIENTINE $C_{20}H_{23}O_3N$ 325.1677
SOURCES: Synthesis (269)

403. *N*-METHYLISOTHEBAINE $C_{20}H_{24}O_3N^+$ 326.1755
(*N*-Methylisothebainium cation)
SOURCES: Papaveraceae: *Papaver orientale* (249)

407. LASTOURVILLINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Fumariaceae: *Fumaria indica* (14)

411. *O,N*-DIMETHYLFISSOLDINE $C_{20}H_{21}O_4N$ 339.1469
(*O,N*-Dimethylcalycinine, *N*-methyldiscoguattine)
SOURCES: Synthesis (47)

420. NORPHOEBINE* $C_{20}H_{21}O_5N$ 355.1418
(*O*-Methylxyloguyelline)
SOURCES: Lauraceae: *Nectandra sinuata* (44,45)
*Erroneously named norlirioferine in (45).

421. PHOEBINE* $C_{21}H_{23}O_5N$ 369.1575
SOURCES: Lauraceae: *Nectandra sinuata* (44,45)
*Erroneously named 1,2,3-trimethoxy-9,10-methylenedioxydihydroaporphine in (45).

7-Hydroxy-7-methylaporphines

425. ISOGUATTOUREGIDINE $C_{19}H_{19}O_5N$ 341.1262
SOURCES: Annonaceae: *Guatteria foliosa* (189)

Oxoaporphines

115. LYSICAMINE $C_{18}H_{13}O_3N$ 291.0895
(Oxonuciferine)
SOURCES: Annonaceae: *Annona cherimolia* (245), *Artabotrys maingayi* (64), *Desmos dumosus* (174), *Enantia chlorantha* (231), *Oncodostigma monosperma* (26), *Oxymitra velutina* (2), *Rollinia mucosa* (74), *Trivalvaria macrophylla* (63), *Unonopsis spectabilis* (158), *Xylopia aethiopica* (114)
Aristolochiaceae: *Aristolochia contorta* (161)
Menispermaceae: *Telitoxicum glaziovii* (196)
Rhamnaceae: *Ziziphus jujuba* var. *inermis* (111)
Synthesis (12,214)

116. LIRIODENINE $C_{17}H_9O_3N$ 275.0582
SOURCES: Annonaceae: *Alphonsea mollis* (293), *Annona ambotay* (72), *Annona bullata* (124), *Annona cherimolia* (230,245,300), *Annona montana* (283), *Annona reticulata* (294,297), *Annona squamosa* (173,301), *Artabotrys grandifolius* (50), *Artabotrys maingayi* (64), *Artabotrys uncinatus* (284), *Cananga odorata* (298), *Cardiopetalum calophyllum* (238), *Cleistopholis patens* (177), *Cymbopetalum penduliflorum* (169), *Desmos dasymaschalus* (109), *Disepalumm pulchrum* (159), *Enantia chlorantha* (231), *Fissistigma glaucescens* (286), *Goniothalamus scortechinii* (21), *Goniothalamus tapis* (21), *Guatteria* cf. *discolor* (100), *Guatteria goudotiana* (41), *Guatteria oliviformis* (179), *Oncodostigma monosperma* (26), *Oxandra asbeckii* (265), *Oxymitra velutina* (2), *Polyalthia longifolia* (282,285), *Polyalthia macropoda* (159,229), *Polyalthia stenopetala* (159), *Polyalthia suberosa* (91), *Pseuduvaria indochinensis* (307), *Rollinia mucosa* (74), *Trivalvaria macrophylla* (63), *Unonopsis spectabilis* (158), *Xylopia aethiopica* (114)
Eupomatiaceae: *Eupomatia bennettii* (35)
Magnoliaceae: *Aromadendron elegans* (99), *Michelia floribunda* (199), *Paramichelia baillonii* (233), *Talauma betongensis* (170), *Talauma gitengensis* (207)
Menispermaceae: *Anisocycla cymosa* (134), *Stephania sutchuenensis* (276)
Monimiaceae: *Siparuna tonduziana* (180)
Ranunculaceae: *Thalictrum sessile* (288), *Xanthorhiza simplicissima* (290)
Synthesis (65)

118. *O*-METHYLMOSCHATOLINE $C_{19}H_{15}O_4N$ 321.1000
(Homomoschatoline)

SOURCES: Annonaceae: *Annona ambotay* (72), *Desmos dasymaschalus* (109), *Enantia chlorantha* (231), *Fissistigma oldhamii* (280), *Guatteria diospyroides* (182), *Guatteria tonduzii* (179), *Neostenanthera gabonensis* (227), *Xylopia aethiopica* (114)
Menispermaceae: *Telitoxicum glaziovii* (196)

119. ATHEROSPERMIDINE $C_{18}H_{11}O_4N$ 305.0687
SOURCES: Annonaceae: *Annona bullata* (125), *Artabotrys grandifolius* (50), *Artabotrys maingayi* (64), *Artabotrys uncinatus* (284), *Enantia chlorantha* (231), *Guatteria foliosa* (189), *Pseuduvaria indochinensis* (307)

120. LANUGINOSINE $C_{18}H_{11}O_4N$ 305.0687
(Oxoxylopine)
SOURCES: Annonaceae: *Annona cherimolia* (230,245), *Desmos dasymaschalus* (109), *Polyalthia longifolia* var. *pendulla* (92), *Polyalthia suberosa* (91), *Rollinia pickelli* (75), *Xylopia vieillardi* (132)

121. OXOLAURELINE $C_{18}H_{11}O_4N$ 305.0687
(Lauterine, 10-methoxyliriodenine)
SOURCES: Annonaceae: *Polyalthia* sp. (114)

123. ATHEROLINE $C_{19}H_{15}O_5N$ 337.0949
SOURCES: Lauraceae: *Cryptocarya velutinosa* (160), *Dehaasia triandra* (186)

124. OXOGLAUCINE $C_{20}H_{17}O_5N$ 351.1105
(*O*-Methylatheroline)
SOURCES: Annonaceae: *Xylopia aethiopica* (114), *Xylopia vieillardi* (132)
Fumariaceae: *Platycapnos spicata* (22,24), *Sarcocapnos baetica* ssp. *integrifolia* (43), *Sarcocapnos crassifolia* ssp. *speciosa* (42), *Sarcocapnos enneaphylla* (266), *Sarcocapnos saetabensis* (23)
Lauraceae: *Phoebe cinnamomifolia* (193)
Magnoliaceae: *Aromadendron elegans* (99)
Papaveraceae: *Glaucium flavum* (66)
Synthesis (12,65)

125. OXONANTENINE $C_{19}H_{13}O_5N$ 335.0793
SOURCES: Fumariaceae: *Platycapnos spicata* (22,24,254)
Menispermaceae: *Stephania tetrandra* (244)
Monimiaceae: *Siparuna tonduziana* (180)

126. DICENTRINONE $C_{19}H_{13}O_5N$ 335.0793
SOURCES: Menispermaceae: *Stephania zippeliana* (51)

127. CASSAMERIDINE $C_{18}H_9O_5N$ 319.0480
Menispermaceae: *Stephania tetrandra* (244)

129. OXOPURPUREINE $C_{21}H_{19}O_6N$ 381.1211
SOURCES: Lauraceae: *Phoebe cinnamomifolia* (193)
Ranunculaceae: *Thalictrum microgynum* (274)

134. CORUNNINE $C_{20}H_{17}O_5N$ 351.1105
SOURCES: Fumariaceae: *Platycapnos spicata* (22,24,254), *Sarcocapnos crassifolia* ssp. *speciosa* (42), *Sarcocapnos enneaphylla* (266)
Magnoliaceae: *Liriodendron tulipifera* (122)
Papaveraceae: *Glaucium flavum* (66)

135. PONTEVEDRINE $C_{21}H_{19}O_6N$ 381.1211
SOURCES: Fumariaceae: *Platycapnos spicata* (24), *Sarcocapnos enneaphylla* (266), *Sarcocapnos saetabensis* (23)
Magnoliaceae: *Aromadendron elegans* (99)
Synthesis (12,38,39)

136. ALKALOID PO-3 $C_{19}H_{15}O_4N$ 321.1000
SOURCES: Synthesis (12)

137. NANDAZURINE $C_{19}H_{13}O_5N$ 335.0793
SOURCES: Fumariaceae: *Platycapnos spicata* (254)

214. *O,N*-DIMETHYLLIRIODENDRONINE $C_{18}H_{13}O_3N$ 291.0895
SOURCES: Synthesis (214)

215. LIRIODENDRONINE $C_{16}H_9O_3N$ 263.0582
SOURCES: Magnoliaceae: *Liriodendron tulipifera* (122)
Synthesis (214)

216. OXOSTEPHANINE $C_{18}H_{11}O_4N$ 305.0687
SOURCES: Annonaceae: *Alphonsea mollis* (293), *Goniothalamus scortechinii* (21), *Goniothalamus tapis* (21), *Polyalthia stenopetala* (159), *Polyalthia suberosa* (91,92), *Trivalvaria macrophylla* (63)
Menispermaceae: *Stephania zippeliana* (51)

218. OXOPUTERINE $C_{18}H_{11}O_4N$ 305.0687
(Oxo-*O*-methylpukateine)
SOURCES: Annonaceae: *Guatteria* cf. *discolor* (100)
Menispermaceae: *Stephania excentrica* (70)

332. ISOMOSCHATOLINE $C_{18}H_{13}O_4N$ 307.0844
SOURCES: Annonaceae: *Cleistopholis patens* (260)

335. PERUVIANINE $C_{19}H_{13}O_4N$ 307.0844
SOURCES: Synthesis (34)

337. OXOANOLOBINE $C_{17}H_9O_4N$ 291.0531
SOURCES: Annonaceae: *Pseuduvaria indochinensis* (307)
Menispermaceae: *Stephania excentrica* (70)

339. OXOBUXIFOLINE $C_{19}H_{13}O_5N$ 335.0793
SOURCES: Annonaceae: *Desmos dasymaschalus* (109)

340. OXOCREBANINE $C_{19}H_{13}O_5N$ 335.0793
SOURCES: Annonaceae: *Desmos dasymaschalus* (109), *Fissistigma glaucescens* (286)
Menispermaceae: *Stephania hainanensis* (90), *Stephania succifera* (58)

426. 1,2,11-TRIMETHOXYOXOAPORPHINE $C_{19}H_{15}O_4N$ 321.1000
SOURCES: Synthesis (12)

430. OXOPHOEBINE $C_{20}H_{15}O_6N$ 365.0898
SOURCES: Annonaceae: *Annona spraguei* (67), *Xylopia aethiopica* (114)

431. KUAFUMINE $C_{20}H_{15}O_6N$ 365.0898
SOURCES: Annonaceae: *Fissistigma glaucescens* (286)

4,5-Dioxoaporphines

176. CEPHARADIONE B $C_{19}H_{15}O_4N$ 321.1000
SOURCES: Piperaceae: *Piper attenuatum* (76), *Piper boehimerifolium* (76), *Piper hamiltonii* (76), *Piper longum* (76,77)
Saururaceae: *Houttuynia cordata* (130)
Synthesis (12)

177. CEPHARADIONE A $C_{18}H_{11}O_4N$ 305.0687
SOURCES: Piperaceae: *Piper acutisleginum* (217), *Piper attenuatum* (76), *Piper boehimerifolium* (76), *Piper hamiltonii* (76), *Piper longum* (76,77), *Piper manausense* (68), *Piper methysticum* (129)

242. NORCEPHARADIONE B $C_{18}H_{13}O_4N$ 307.0844
SOURCES: Annonaceae: *Oxymitra velutina* (2)
Piperaceae: *Piper attenuatum* (76), *Piper boehimerifolium* (76), *Piper hamiltonii* (76), *Piper longum* (76,77)
Saururaceae: *Houttuynia cordata* (224)
Synthesis (12)

348. 4,5-DIOXODEHYDROASIMILOBINE $C_{17}H_{11}O_4N$ 293.0687
(Noraristolodione)
SOURCES: Annonaceae: *Monocyclanthus vignei* (1)
Aristolochiaceae: *Aristolochia contorta* (161), *Aristolochia liukiuensis* (198)
Piperaceae: *Piper attenuatum* (76), *Piper boehimerifolium* (76), *Piper longum* (76,77)

353. CORYDIONE $C_{20}H_{15}O_6N$ 365.0898
(4,5-Dioxodehydronantenine)
SOURCES: Menispermaceae: *Stephania tetrandra* (244)

354. DIHYDROPONTEVEDRINE $C_{21}H_{21}O_6N$ 383.1367
SOURCES: Papaveraceae: *Glaucium flavum* (66)

433. ARISTOLODIONE $C_{18}H_{13}O_4N$ 307.0844
(Piperadione)
SOURCES: Piperaceae: *Piper attenuatum* (76), *Piper hamiltonii* (76), *Piper longum* (76,77)

434. NORCEPHARADIONE A $C_{17}H_9O_4N$ 291.0531
SOURCES: Annonaceae: *Oncodostigma monosperma* (26)

C-7 and/or C-4 Oxygenated Aporphines

138. NORUSHINSUNINE $C_{17}H_{15}O_3N$ 281.1051
SOURCES: Annonaceae: *Annona cherimolia* (245,300), *Annona reticulata* (294,297), *Cardiopetalum calophyllum* (238), *Oncodostigma monosperma* (26)
Magnoliaceae: *Talauma betongensis* (170)

139. USHINSUNINE $C_{18}H_{17}O_3N$ 295.1207
SOURCES: Annonaceae: *Artabotrys maingayi* (64), *Cananga odorata* (298,299), *Oxymitra velutina* (2)

143. OLIVERINE $C_{20}H_{21}O_4N$ 339.1469
SOURCES: Annonaceae: *Greenwayodendron oliveri* (syn. *Polyalthia oliveri*) (3)

148. CATALINE $C_{21}H_{25}O_5N$ 371.1731
SOURCES: Papaveraceae: *Glaucium flavum* (66)

222. OLIVEROLINE $C_{18}H_{17}O_3N$ 295.1207
SOURCES: Annonaceae: *Polyalthia macropoda* (159,229)
Menispermaceae: *Stephania epigeae* (59)

223. OLIVEROLINE β-*N*-OXIDE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Annonaceae: *Polyalthia longifolia* (282,285), *Polyalthia macropoda* (159)

356. NOROLIVEROLINE $C_{17}H_{15}O_3N$ 281.1051
SOURCES: Annonaceae: *Polyalthia longifolia* (285)
Monimiaceae: *Siparuna pauciflora* (178)

441. USHINSUNINE β-*N*-OXIDE $C_{18}H_{17}O_4N$ 311.1156
SOURCES: Annonaceae: *Cananga odorata* (298,299)
Synthesis (298)

455. EPIGLAUFIDINE $C_{20}H_{23}O_5N$ 357.1575
SOURCES: Menispermaceae: *Stephania zippeliana* (51)

Dehydroaporphines (6a,7-Dehydroaporphines)

151. DEHYDROROEMERINE $C_{18}H_{15}O_2N$ 277.1102
SOURCES: Menispermaceae: *Stephania disciflora* (264), *Stephania yunnanensis* var. *trichocalyx* (55)

154. DEHYDROGLAUCINE $C_{21}H_{23}O_4N$ 353.1626
SOURCES: Fumariaceae: *Platycapnos spicata* (22,24,254), *Sarcocapnos enneaphylla* (266), *Sarcocapnos saetabensis* (23)
Papaveraceae: *Glaucium flavum* (66)
Ranunculaceae: *Thalictrum ichengense* (291,292)
Synthesis (107)

156. DEHYDRONANTENINE $C_{20}H_{19}O_4N$ 337.1313
SOURCES: Annonaceae: *Guatteria goudotiana* (41)
Fumariaceae: *Platycapnos spicata* (22,24,254)

157. DEHYDRODICENTRINE $C_{20}H_{19}O_4N$ 337.1313
SOURCES: Menispermaceae: *Stephania dentifolia* (55)

369. DEHYDROSTEPHANINE $C_{19}H_{17}O_3N$ 307.1207
SOURCES: Menispermaceae: *Stephania yunnanensis* var. trichocalyx (55)

372. DEHYDROCREBANINE $C_{20}H_{19}O_4N$ 337.1313
SOURCES: Menispermaceae: *Stephania dentifolia* (55), *Stephania hainanensis* (90), *Stephania succifera* (58), *Stephania yunnanensis* var. *trichocalyx* (55)

457. DEHYDRONORNUCIFERINE $C_{18}H_{17}O_2N$ 279.1258
SOURCES: Synthesis (12,131)

459. DEHYDROANONAINE $C_{17}H_{13}O_2N$ 263.0946
SOURCES: Synthesis (12,131)

464. 1,2,11-TRIMETHOXYDEHYDRONORAPORPHINE $C_{19}H_{19}O_3N$ 309.1364
(Nororientidine)
SOURCES: Synthesis (12)

468. DEHYDRONORGLAUCINE $C_{20}H_{21}O_4N$ 339.1469
SOURCES: Synthesis (12,107)

469. TETRADEHYDROGLAUCINE $C_{21}H_{21}O_4N$ 351.1469
(Didehydroglaucine)
SOURCES: Papaveraceae: *Glaucium flavum* (66)

470. DEHYDRONORNANTENINE $C_{19}H_{17}O_4N$ 323.1156
SOURCES: Synthesis (131)

471. DEHYDRONEOLITSINE $C_{19}H_{15}O_4N$ 321.1000
SOURCES: Annonaceae: *Guatteria goudotiana* (41)

479. GOUDOTIANINE $C_{20}H_{21}O_4N$ 339.1469
SOURCES: Annonaceae: *Guatteria goudotiana* (41)
Synthesis: (40)

Phenanthrenes

162. ARGENTININE $C_{19}H_{21}O_2N$ 295.1571
SOURCES: Annonaceae: *Annona montana* (283), *Guatteria goudotiana* (41), *Guatteria foliosa* (189), *Monocyclanthus vignei* (1), *Oxymitra velutina* (2), *Phaeanthus vietnamensis* (206)
Menispermaceae: *Stephania tetrandra* (210)

163. ATHEROSPERMININE $C_{20}H_{23}O_2N$ 309.1728
SOURCES: Annonaceae: *Fissistigma glaucescens* (286), *Guatteria* cf. *discolor* (100), *Oxymitra velutina* (2), *Phaeanthus vietnamensis* (206)
Synthesis (86,87)

165. UVARIOPSINE $C_{20}H_{21}O_3N$ 323.1520
(Isolaureline methine, *N*-methylxylopine methine)
SOURCES: Synthesis (185)

167. UVARIOPSAMINE $C_{22}H_{27}O_4N$ 369.1940
SOURCES: Annonaceae: *Greenwayodendron oliveri* (syn. *Polyalthia oliveri*) (3)

169. THALICTHUBERINE $C_{21}H_{23}O_4N$ 353.1626
SOURCES: Fumariaceae: *Platycapnos spicata* (22,224,254), *Platycapnos tenuiloba* ssp. *parallela* (254), *Platycapnos tenuiloba* ssp. *tenuiloba* (254)
Lauraceae: *Ocotea insularis* (118)
Ranunculaceae: *Thalictrum delavayi* (94)

171. THALIGLUCINE $C_{21}H_{21}O_4N$ 351.1469
(Thalphenine methine)
SOURCES: Ranunculaceae: *Thalictrum flavum* (271), *Thalictrum minus* (223)

172. THALIGLUCINONE $C_{21}H_{19}O_5N$ 365.1262
SOURCES: Ranunculaceae: *Thalictrum minus* var. *minus* (19)

239. NORATHEROSPERMININE $C_{19}H_{21}O_2N$ 295.1571
SOURCES: Synthesis (83)

241. SECOGLAUCINE $C_{21}H_{25}O_4N$ 355.1782
SOURCES: Synthesis (86,87)

378. BISNORATHEROSPERMININE $C_{18}H_{19}O_2N$ 281.1415
SOURCES: Synthesis (87)

379. ATHEROSPERMININE *N*-OXIDE $C_{22}H_{23}O_3N$ 325.1677
SOURCES: Annonaceae: *Fissistigma glaucescens* (286), *Oxymitra velutina* (2)
Synthesis (187)

483. STEPHENANTHRINE $C_{19}H_{19}O_2N$ 293.1415
(Roemerine methine)
SOURCES: Annonaceae: *Monocyclanthus vignei* (1)
Menispermaceae: *Anisocycla cymosa* (136), *Stephania tetrandra* (210)
Synthesis (185)

487. GLAUCINE METHINE $C_{22}H_{27}O_4N$ 369.1940
(*N*-Methylsecoglaucine)
SOURCES: Fumariaceae: *Platycapnos spicata* (22,24), *Sarcocapnos enneaphylla* (266)
Synthesis (22,24,86,87,185)

490. SECOBOLDINE $C_{19}H_{21}O_4N$ 327.1469
SOURCES: Synthesis (164)

Miscellaneous

380. DUGUENAINE $C_{19}H_{15}O_3N$ 305.1051
SOURCES: Synthesis (12)

382. TELAZOLINE $C_{17}H_{12}O_2N_2$ 276.0897
SOURCES: Menispermaceae: *Telitoxicum glaziovii* (196)

383. 6-HYDROXY-5,9-DIMETHOXYOXOISOAPORPHINE $C_{18}H_{13}O_4N$ 307.0844
(6-*O*-Demethylmenisporphine)
SOURCES: Synthesis (153)

385. TASPINE $C_{20}H_{19}O_6N$ 369.1211
(Thaspine)
SOURCES: Euphorbiaceae: *Croton* sp. (222)

387. TELITOXINE $C_{17}H_{13}O_3N$ 279.0895
SOURCES: Synthesis (197)

388. NORRUFESCINE $C_{18}H_{15}O_4N$ 309.1000
SOURCES: Menispermaceae: *Cissampelos pareira* (201)

391. IMELUTEINE $C_{20}H_{19}O_5N$ 353.1262
SOURCES: Synthesis (305)

392. EUPOLAURIDINE $C_{14}H_8N_2$ 204.0687
(Canangine)
SOURCES: Annonaceae: *Cleistopholis patens* (123,177)
Eupomatiaceae: *Eupomatia laurina* (35)
Synthesis (30,123,267)

495. CLEISTOPHOLINE $C_{14}H_9O_2N$ 223.0633
SOURCES: Annonaceae: *Annona cherimolia* (230), *Oncodostigma monosperma* (26)
Synthesis (29,148,151,310)

498. ONYCHINE $C_{13}H_9ON$ 195.0684
(1-Methyl-4-azafluoren-9-one)
SOURCES: Annonaceae: *Cleistopholis patens* (123), *Polyalthia longifolia* (49), *Unonopsis spectabilis* (158)
Synthesis (10,30,123,148,211,267)

499. DIHYDROONYCHINE $C_{13}H_{11}ON$ 197.0840
SOURCES: Synthesis (123,148)

500. 6-HYDROXYONYCHINE $C_{13}H_9O_2N$ 211.0633
(Oxylopinine)
SOURCES: Annonaceae: *Unonopsis spectabilis* (158)
Synthesis (256)

502. 6-METHOXYONYCHINE $C_{14}H_{11}O_2N$ 225.0789
SOURCES: Synthesis (10,211,256)

503. 8-HYDROXYONYCHINE $C_{13}H_9O_2N$ 211.0633
SOURCES: Synthesis (256)

505. URSULINE $C_{14}H_{11}O_3N$ 241.0738
(Oxylopine-revised structure-)
SOURCES: Annonaceae: *Oncodostigma monosperma* (26), *Unonopsis spectabilis* (158)
Synthesis (151)

508. MACONDINE $C_{14}H_{11}O_3N$ 241.0738
SOURCES: Annonaceae: *Unonopsis spectabilis* (158)

510. DARIENINE $C_{15}H_{13}O_4N$ 271.0844
SOURCES: Annonaceae: *Polyalthia longifolia* (49,285)

529. DAURIPORPHINE $C_{20}H_{17}O_5N$ 321.1105
(Bianfugenine)
SOURCES: Menispermaceae: *Sinomenium acutum* (60)

531. EUPOLAURIDINE *N*-OXIDE $C_{14}H_8ON_2$ 220.0636
SOURCES: Annonaceae: *Cleistopholis patens* (177)
Synthesis (33)

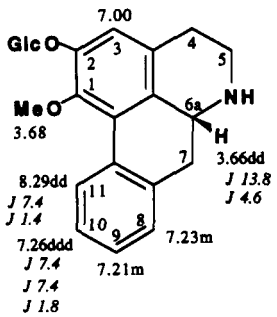
532. EUPOLAURIDINE DI-*N*-OXIDE $C_{14}H_8O_2N_2$ 236.0585
SOURCES: Synthesis (33)

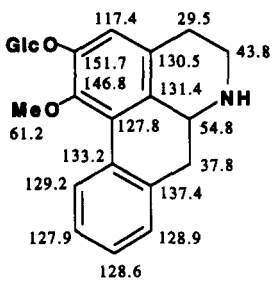
533. SAMPANGINE $C_{15}H_8ON_2$ 232.0636
SOURCES: Synthesis (29,219)

TABLE 4. Completely New Aporphinoid Alkaloids.[a]

Aporphines *sensu stricto*

543. ASIMILOBINE-2-*O*-β-D-GLUCOSIDE

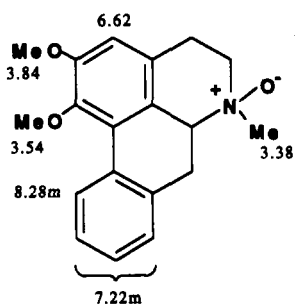




$C_{23}H_{27}O_7N$ 429.1786
Mp: 158° (175)
$[\alpha]_D$: −107° (*c*=0.1, MeOH) (175)
Uv: 211 (4.43), 227 (4.20), 262 (4.03), 272 (4.11), 306 (3.23) (175)
Ir: (KBr) 3432, 2911, 1593, 1427, 1314, 1256, 1073 (175)
^{1}H nmr*: (300 MHz) (175)
^{13}C nmr*: (175)
Ms: 268 (14), 267 (78), 266 (100), 265 (7), 256 (11), 253 (5), 252 (21), 251 (23), 238 (14), 237 (8), 236 (14), 223 (10), 178 (14), 165 (11) (175)
Sources: Menispermaceae: *Stephania pierrei* (175)

*Assignments for other protons and carbons are given in (175).

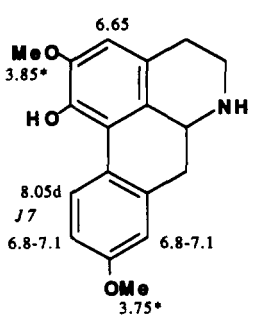
544. NUCIFERINE *N*-OXIDE



$C_{19}H_{21}O_3N$ 311.1520
Mp: 202–205° (hydrochloride) (187)
$[\alpha]_D$: −182° (*c*=0.1, MeOH) (hydrochloride) (187)
Uv: 230 (4.40), 278 (4.06), 314 (3.82) (Hydrochloride) (187)
^{1}H nmr: (60 MHz) (187)
Ms*: 310 (M^+), 294, 293, 280, 264, 252, 237, 221, 207, 194, 189, 168, 165 (187)
Sources: Synthesis (187)

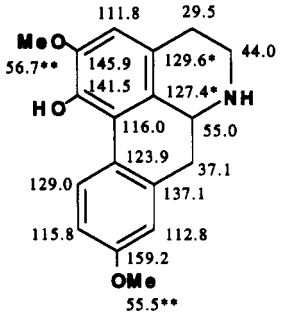
*Partially erroneous data.

545. NORORIENTININE
(1-Hydroxy-2,9-dimethoxynoraporphine)

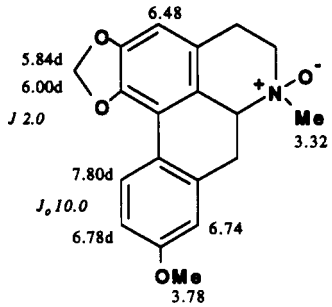


$C_{18}H_{19}O_3N$ 297.1364
$[\alpha]_D$: +61° (*c*=0.1, MeOH) (272)
Uv: 236 (3.91), 279 (4.02), 315sh (3.99) (272)
Ir: (KBr) 3500–3200, 1600, 1520, 1470 (272)
^{1}H nmr: (Me_2CO-d_6, 60 MHz) (272)
^{13}C nmr: (272)
Ms: 297 (M^+, 97), 296 (100), 282 (43), 280 (59), 266 (37) (272)
Sources: Lauraceae: *Ocotea caesia* (272)

[a]Not previously reported in "Aporphinoid Alkaloids" Parts I, II, III, and IV (102–105).

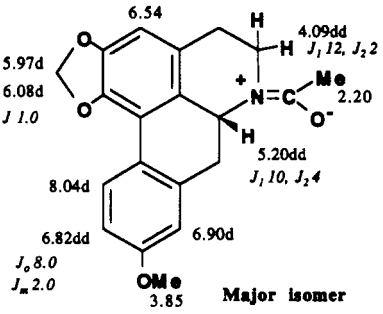


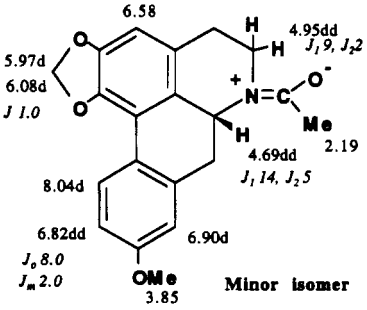
546. ISOLAURELINE *N*-OXIDE
(*N*-Methylxylopine *N*-oxide)



$C_{19}H_{19}O_4N$ 325.1313
Mp: 195–198° (hydrochloride) (187)
[α]D: −59° (*c*=0.1, MeOH) (hydrochloride) (187)
Uv: 220 (4.41), 284 (4.38) (hydrochloride) (187)
^{1}H nmr: (60 MHz) (187)
Ms: 325 (M^+), 309, 308, 294, 266, 208, 164 (187)
Sources: Synthesis (187)

547. *N*-ACETYLXYLOPINE*

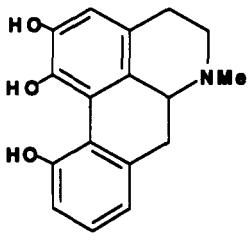




$C_{20}H_{19}O_4N$ 337.1313
Mp: 213–214° (mixture of two isomers) (207)
[α]D: −417° (*c*=0.15) (207)
^{1}H nmr: (400 MHz) (207)
Sources: Synthesis (207)

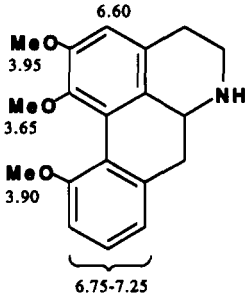
*Amidic aporphines, whether *N*-formyl or *N*-acetyl, always exist as a mixture of enolates, as clearly demonstrated by nmr studies. In each instance, however, for the major isomer, the oxygen of the amidic function lies syn to C-6a, and anti to C-5, a phenomenon most probably associated with steric factors.

548. 1,2,11-TRIHYDROXYAPORPHINE



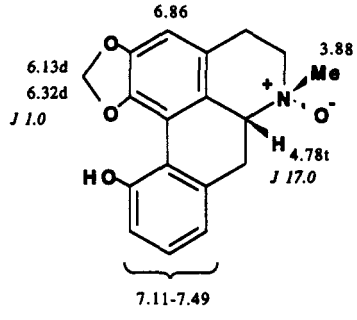
$C_{17}H_{17}O_3N$ 283.1207
Mp: 190–205° (HBr) (225)
$[\alpha]_{578}$: −185° (*c*=0.2, MeOH) (HBr) (225)
Sources: Synthesis (225)

549. 1,2,11-TRIMETHOXYNORAPORPHINE



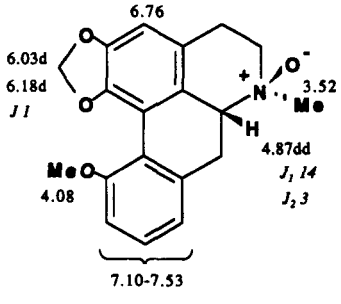
$C_{19}H_{21}O_3N$ 311.1520
$[\alpha]_D$: +76° (*c*=0.1, $CHCl_3$) (62)
Uv: 265, 300 (62)
^1H nmr: ($CDCl_3$+DMSO-d_6, 90 MHz) (62)
Ms: 311 (M^+, 98), 310 (46), 296 (100), 282 (8), 280 (92) (62)
Sources: Rhamnaceae: *Discaria chacaye* (62)

550. (−)-6-EPILAUREPUKINE



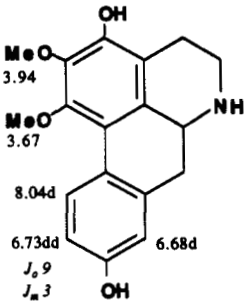
$C_{18}H_{17}O_4N$ 311.1156
Mp: 176–178° (278)
$[\alpha]_D$: −214° (*c*=0.1, $CHCl_3$/MeOH 1:1) (278)
^1H nmr: (CF_3COOH, 100 MHz) (278)
Ms: 311 (6), 295 (74), 294 (78), 293 (35), 280 (15), 278 (15), 265 (33), 252 (100) (278)
Sources: Synthesis (278)

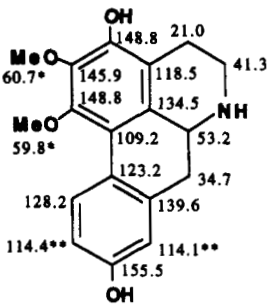
551. *O*-METHYLLAUREPUKINE
(*O*-Methylpukateine *N*-oxide)



$C_{19}H_{19}O_4N$ 325.1313
Mp: 146–149/169–175° (278)
$[\alpha]_D$: −258° (*c*=0.19, EtOH) (278)
^1H nmr: (CF_3COOH, 100 MHz) (278)
Sources: Synthesis (278)

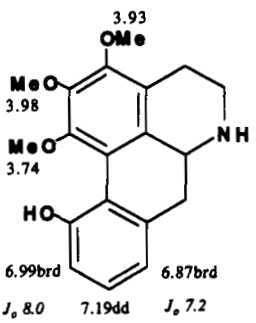
552. NORGUATTEVALINE
(3,9-Dihydroxynornuciferine)

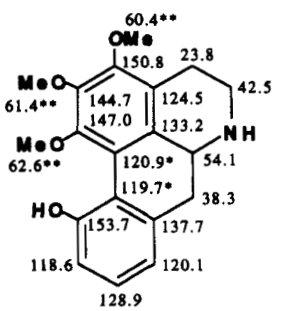




$C_{18}H_{19}O_4N$ 313.1313
[α]D: (+) (EtOH) (189)
Uv: 210 (4.49), 285 (4.27) (189)
^{1}H nmr: ($CDCl_3/CD_3OD$, 200 MHz) (189)
^{13}C nmr: ($CDCl_3/CD_3OD$) (189)
Ms: 313 (M^+, 83), 312 (100), 298 (18) (189)
Sources: Annonaceae: *Guatteria foliosa* (189)

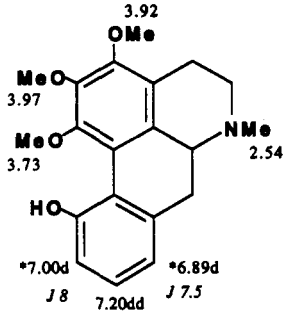
553. STENANTHERINE





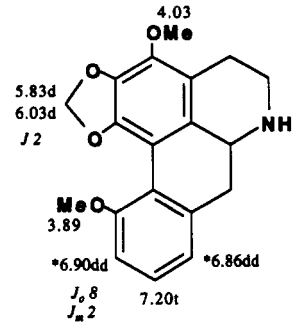
$C_{19}H_{21}O_4N$ 327.1469
[α]D: −140° (c=0.1, EtOH) (227)
Uv: 217 (4.62), 267sh, 274 (4.14), 296 (3.82) (227)
Ir: ($CHCl_3$) 3240 (227)
^{1}H nmr: (400 MHz) (227)
^{13}C nmr: (227)
Ms: 327 (100), 326 (45), 312 (49), 310 (15), 297 (9), 296 (54), 280 (8) (227)
Cd: 0 (350), +12 (292), +18 (271), 0 (246), −70 (233), 0 (223), +36 (212) (227)
Sources: Annonaceae: *Neostenanthera gabonensis* (227)

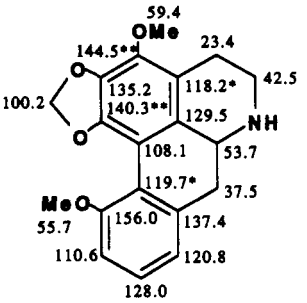
554. *N*-METHYLSTENANTHERINE



$C_{20}H_{23}O_4N$ 341.1626
Uv: 216 (4.61), 266sh, 272 (4.12), 395sh (3.85) (227)
^{1}H nmr: (400 MHz) (227)
Ms: 341 (M^+, 100), 340 (27), 327 (15), 326 (84), 324 (29), 311 (19), 310 (99), 294 (17) (227)
Cd: 0 (350), +7 (300), +8 (270), 0 (247), −55 (234), 0 (223), +16 (213) (227)
Sources: Annonaceae: *Neostenanthera gabonensis* (227)

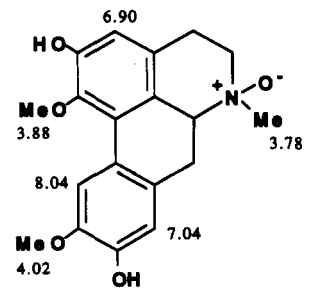
555. 3-METHOXYPUTERINE
(*O*-Methylelmerrillicine)





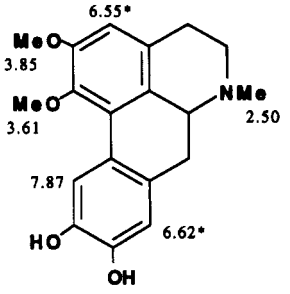
$C_{19}H_{19}O_4N$ 325.1313
$[\alpha]_D$: (−) (EtOH) (189)
Uv: 217 (4.31), 276 (4.08) (189)
^{1}H nmr: (200 MHz) (189)
^{13}C nmr: (189)
Ms: 325 (M^+, 98), 324 (100), 323 (18), 310 (15), 296 (21), 295 (28), 294 (37) (189)
Sources: Annonaceae: *Guatteria foliosa* (189)

556. BOLDINE *N*-OXIDE



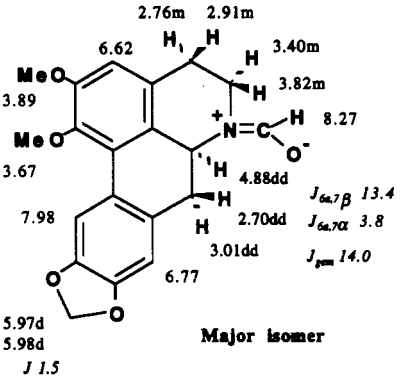
$C_{19}H_{21}O_5N$ 343.1418
Mp: 155–157° (187)
$[\alpha]_D$: +130° (*c*=0.1, MeOH) (187)
Uv: 218 (4.43), 285 (4.12), 308 (3.42) (187)
^{1}H nmr: (CD_3COOH, 60 MHz) (187)
Ms: 343 (M^+), 327, 326, 312, 296, 284, 269, 240, 225, 197, 181, 169, 152, 139 (187)
Sources: Synthesis (187)

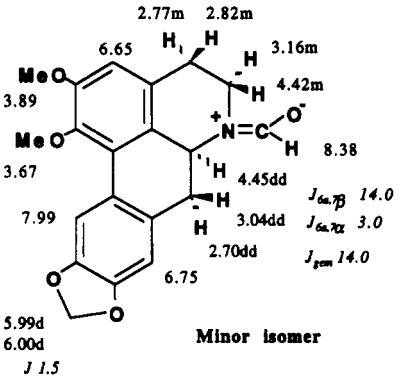
557. 1,2-DIMETHOXY-9,10-DIHYDROXYAPORPHINE



$C_{19}H_{21}O_4N$ 327.1469
Mp: 173–178° (212)
Ir: (nujol) 3408 (212)
^{1}H nmr: ($CDCl_3/CD_3OD$ 9:1, 60 MHz) (212)
Ms: 327 (M^+), 326, 312, 296, 284, 269, 253 (212)
Sources: Synthesis (212)

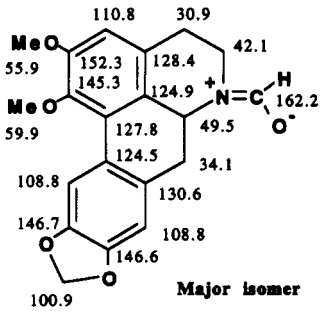
558. *N*-FORMYLNORNANTENINE*

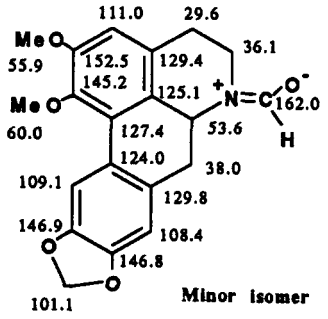




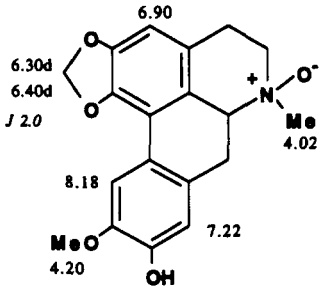
$C_{20}H_{19}O_5N$ 353.1262
[α]D: +292° (*c*=0.1, MeOH) (259)
+315° (*c*=0.1, $CHCl_3$) (259)
Uv: 240 (4.30), 283 (4.02), 309 (4.12), 320sh (4.05) (259)
Ir: ($CHCl_3$) 3020, 2980, 1660, 1615, 1585 (259)
^{1}H nmr: (500 MHz) (259)
^{13}C nmr: (259)
Ms: 353 (M^+, 61), 308 (9), 295 (100), 281 (16), 251 (12) (259)
Sources: Menispermaceae: *Cyclea atjehensis* (259)

*See note given for compound **547**.



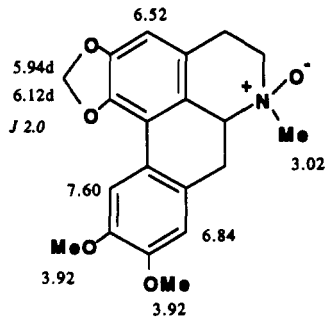


559. *N*-METHYLACTINODAPHNINE *N*-OXIDE



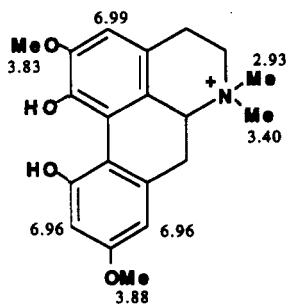
$C_{19}H_{19}O_5N$ 341.1262
Mp: 170–172° (187)
[α]D: +74° (*c*=0.1, MeOH) (187)
Uv: 218(4.28), 284(3.98), 310(3.56)(187)
^{1}H nmr: (CF_3COOH, 60 MHz) (187)
Ms: 341 (M^+), 325, 324, 310, 308, 294, 282, 267, 251, 238, 224, 165, 152 (187)
Sources: Synthesis (187)

560. DICENTRINE *N*-OXIDE

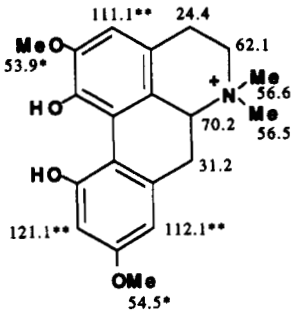


$C_{20}H_{21}O_5N$ 355.1418
Mp: 95–97° (187)
[α]D: −20° (*c*=0.1, MeOH) (187)
Uv: 226(4.31), 282(4.02), 306(3.68)(187)
^{1}H nmr: (60 MHz) (187)
Ms: 355 (M^+), 339, 338, 337, 296, 281, 279, 265, 251, 223, 195, 176, 165, 163, 151 (187)
Sources: Synthesis (187)

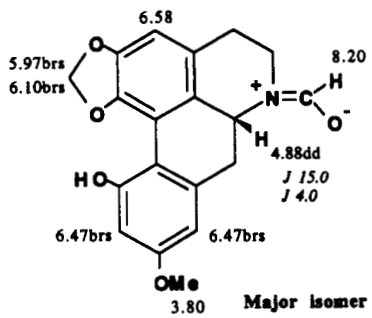
561. TRILOBININE



$C_{20}H_{24}O_4N^+ X^-$ 342.1704
Mp: 228–229° (dec) (I^-) (176)
238–239° (dec) (Cl^-) (176)
Uv: 229(4.54), 272(3.89), 320(3.90)(Cl^-) (176)
Ir: (KBr) 3400, 3020, 2960, 2840, 1640, 1510, 1480, 1310, 1248, 1050 (Cl^-) (176)
^{1}H nmr: (176)
^{13}C nmr: 150.4, 149.5, 142.8, 142.3 (C-1, 2, 9, 11), 126.3, 121.7, 121.3, 120.5, 119.8 (C-1a, 1b, 3a, 7a, 11a) (176)
Ms: 342 (M^+), 341, 283, 58 (100) (176)
Sources: Ranunculaceae: *Thalictrum acutifolium* (176)

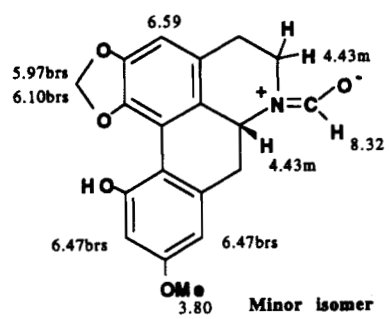


562. *N*-FORMYLCALYCININE*

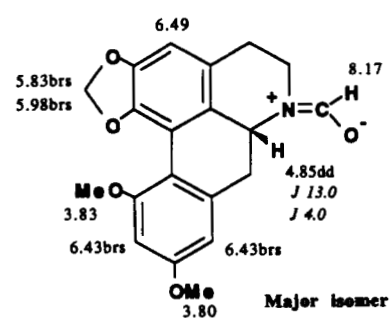


$C_{19}H_{17}O_5N$ 339.1105
[α]D: −247° (*c*=0.9, $CHCl_3$) (47)
Uv: 223 (4.42), 270sh (4.01), 280 (4.11), 302 (3.98) (47)
Ir: (film) 3360, 1655, 1612, 1455, 1412, 1280, 1220, 1190, 1150, 1130, 1030, 930, 835, 730 (47)
^{1}H nmr: (400 MHz) (47); also in C_5D_5N (47)
Ms: 339 (M^+, 60), 282 (24), 281 (100) (47)
Sources: Synthesis (47)

*See note given for compound **547**.

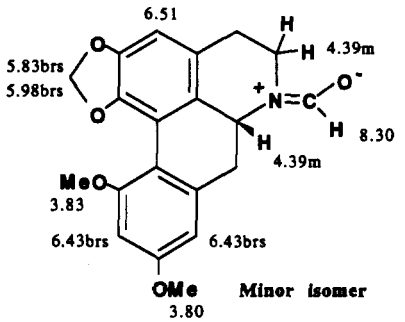


563. *N*-FORMYLDISCOGUATTINE*

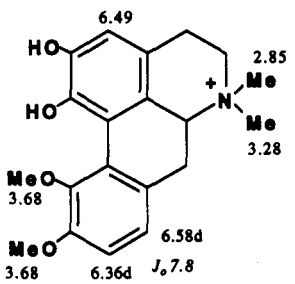


$C_{20}H_{19}O_5N$ 353.1262
[α]D: −815° (*c*=0.1, $CHCl_3$) (47)
Uv: 223 (4.35), 270sh (3.96), 280 (4.06), 302 (3.93) (47)
Ir: (film) 1660, 1600, 1575, 1455, 1405, 1325, 1220, 1197, 1160, 1130, 1050, 1040, 940, 830, 730 (47)
^{1}H nmr: (90 MHz) (47); also in C_5D_5N (47)
Ms: 353 (M^+, 56), 296 (22), 295 (100) (47)
Sources: Synthesis (47)

*See note given for compound **547**.



564. ZIZYPHUSINE



$C_{20}H_{24}O_4N^+ X^-$ 342.1704

Mp: 214–216° (OH^-) (112)

[α]D: +317° (*c*=0.7, H_2O) (112)

Uv: 227 (4.52), 277 (3.83), 320 (3.82) (112)

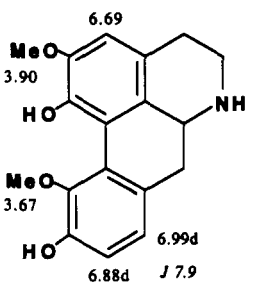
^{1}H nmr: (DMSO-d_6, 80 MHz); also *O,O*-diacetylzizyphusine acetate (112)

^{13}C nmr: *O,O*-diacetylzizyphusine acetate (112)

Ms: *O,O*-diacetylzizyphusine acetate (112)

Sources: Rhamnaceae: *Ziziphus jujuba* var. *inermis* (111), *Ziziphus vulgaris* var. *spinosus* (110, 112, 113)

565. NORISOCORYTUBERINE



$C_{18}H_{19}O_4N$ 313.1313

[α]D: +170° (*c*=0.03, EtOH) (63)

Uv: 220 (4.50), 264sh (4.06), 273 (4.08), 305 (3.82) (63)

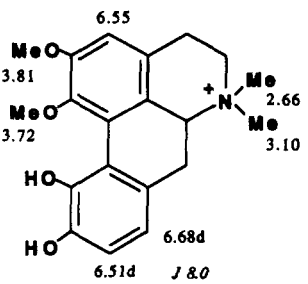
Ir: (film) 2920, 1580, 1450, 1425, 1225, 1115, 1020, 745 (63)

^{1}H nmr: (200 MHz) (63)

Ms: 313 (M^+, 100), 312 (54), 298 (27), 296 (33), 284 (13), 282 (66) (63)

Sources: Annonaceae: *Trivalvaria macrophylla* (63)

566. FUZITINE



$C_{20}H_{24}O_4N^+ X^-$ 342.1704

Mp: 209–211° (dec) (54)

[α]D: +258° (*c*=0.59, MeOH) (54)

Uv: 230, 272, 280, 320 (54)

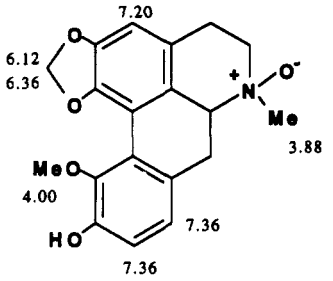
Ir: (KBr) 3440, 2840, 1640, 1530, 1450, 1380, 1250, 1235, 1218, 1070, 1050 (54)

^{1}H nmr: (D_2O) (54)

Ms: 342 (M^+), 341, 327, 283, 268, 251, 225, 165, 152, 139, 59, 58 (54)

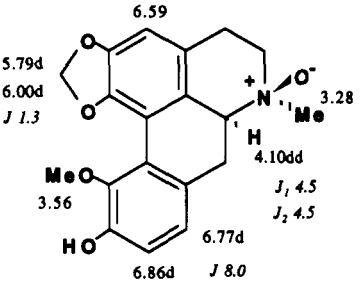
Sources: Ranunculaceae: *Aconitum carmicheali* (54)

567. *N*-METHYLHERNANGERINE *N*-OXIDE
(*N*-Methylnandigerine *N*-oxide)



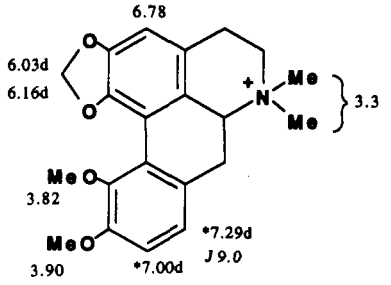
$C_{19}H_{19}O_5N$ 341.1262
Mp: 233–235° (187)
[α]D: +284° (*c*=0.1, MeOH) (187)
Uv: 226(4.30), 274(4.21), 312(3.48)(187)
^{1}H nmr: (CF_3COOH, 60 MHz) (187)
Ms: 341 (M^+), 325, 324, 323, 310, 294, 282, 266, 251, 237, 222, 209, 181, 165, 152 (187)
Sources: Synthesis (with undetermined stereochemistry of the *N*-oxide) (187)

568. *N*-METHYLHERNANGERINE β-*N*-OXIDE
(*N*-Methylnandigerine β-*N*-oxide)



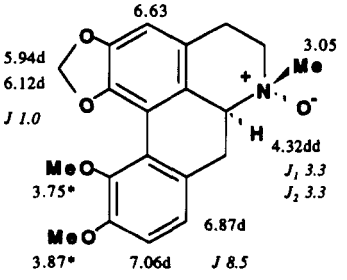
$C_{19}H_{19}O_5N$ 341.1262
Mp: 218–220° (282)
[α]D: +252° (*c*=0.1, MeOH) (282)
Uv: 226(4.20), 274(4.11), 312(3.35)(282)
Ir: (KBr) 1043, 946 (282)
^{1}H nmr: (400 MHz) (282)
Ms: 341 (M^+, 18), 325 (20), 324 (11), 282 (100), 266 (30) (282)
Sources: Annonaceae: *Polyalthia longifolia* (282)

569. *O,N*-DIMETHYLBULBOCAPNINE
(*O,N*-Dimethylbulbocapninium cation)



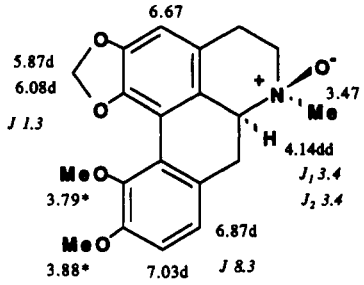
$C_{21}H_{24}O_4N^+ X^-$ 354.1704
^{1}H nmr: (251)
Sources: Synthesis (251)

570. *O*-METHYLBULBOCAPNINE α-*N*-OXIDE



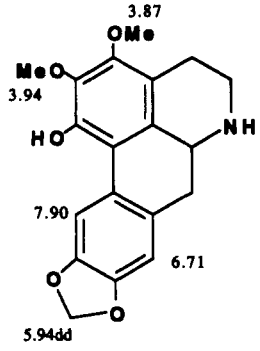
$C_{20}H_{21}O_5N$ 355.1418
[α]D: +153° (*c*=0.1, $CHCl_3$) (282)
Uv: 235(4.20), 275(3.95), 310(3.64)(282)
Ir: (Nujol) 1042, 945 (282)
^{1}H nmr: (400 MHz) (282)
Ms: 355 (M^+, 7), 339 (100), 338 (51), 325 (81), 296 (68) (282)
Sources: Annonaceae: *Polyalthia longifolia* (282)
Synthesis: (with undetermined stereochemistry of the *N*-oxide) (187)

571. *O*-METHYLBULBOCAPNINE β-*N*-OXIDE



$C_{20}H_{21}O_5N$ 355.1418
Mp: 115–117° (282)
[α]D: +158° (*c*=0.1, MeOH)
Uv: 236(4.21), 274(3.94), 308(3.65)(282)
Ir: (KBr) 1046, 948 (282)
^{1}H nmr: (400 MHz) (282)
Ms: 355 (M^+, 30), 339 (15), 338 (11), 325 (10), 296 (100) (282)
Sources: Annonaceae: *Polyalthia longifolia* (282)
Synthesis: (with undetermined stereochemistry of the *N*-oxide) (187)

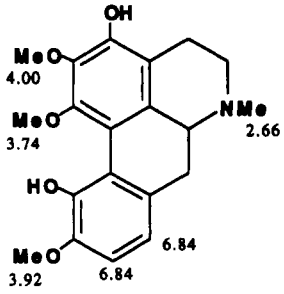
572. 3-METHOXYNORDOMESTICINE



$C_{19}H_{19}O_5N$ 341.1262
Uv: 273, 280, 308, 318 (45)
^{1}H nmr: (360 MHz) (45)
^{13}C nmr*: (45)
Ms: 341 (M^+, 36), 340 (39), 335 (20), 326 (12), 324(10), 321 (23), 320 (100), 304 (105), 276(10), 250(25), 249(28), 222 (15), 221 (18) (45)
Sources: Lauraceae: *Nectandra sinuata* (45)

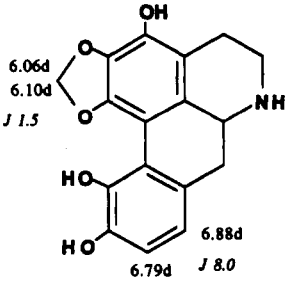
*Erroneous assignments.

573. *N*-METHYLDANGUYELLINE



$C_{20}H_{23}O_5N$ 357.1575
[α]D: +96° (*c*=0.25, $CHCl_3$) (127)
Uv: 219 (4.40), 277 (4.02), 312sh (3.72) (127)
^{1}H nmr: (200 MHz) (127)
Ms: 357 (M^+, 60), 342 (100), 340 (37), 326 (61), 311 (13), 310 (13) (127)
Sources: Ranunculaceae: *Thalictrum pedunculatum* (127)

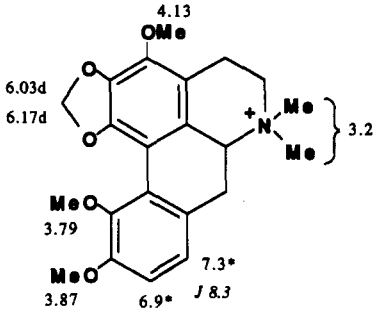
574. 3,10,11-TRIHYDROXY-1,2-METHYLENEDIOXYNORAPORPHINE



$C_{17}H_{15}O_5N$ 313.0949
^{1}H nmr: (400 MHz) (91)
Ms: 313 (M^+), 190, 164, 149 (91)
Sources: Annonaceae: *Polyalthia suberosa* (91)

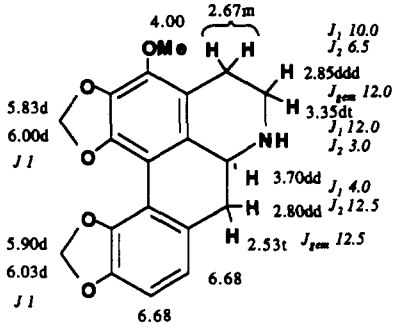
575. *O*-METHYL-*N*-DIMETHYLHERNANDINE
(*O*-Methyl-*N*-dimethylhernandinium cation)

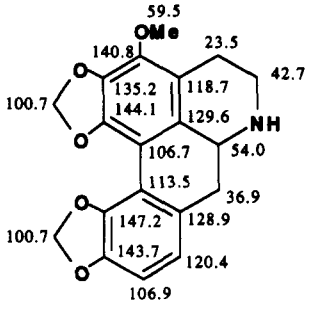
$C_{22}H_{26}O_5N^+ X^-$ 384.1809
^{1}H nmr: (251)
Sources: Synthesis (251)



576. ODUOCINE

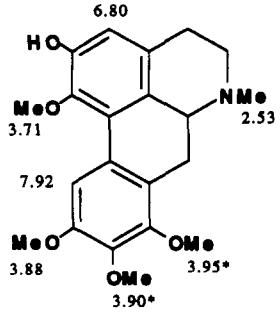
$C_{19}H_{17}O_5N$ 339.1105
Mp: 220° (HCl) (221)
[α]D: +140° (*c*=0.30, MeOH) (221)
Uv: 232 (4.39), 278 (4.24), 306sh (3.84) (221)
Ir: (KBr) 3460, 2960, 1625, 1430, 1260, 1170, 950, 820 (221)
^{1}H nmr: (300 MHz) (221)
^{13}C nmr: (221)
Ms: 339 (M^+, 93), 338 (100), 310 (26), 309 (42), 308 (44), 280 (17), 234 (10), 169 (10) (221)
Sources: Lauraceae: *Lindera myrrha* (221)

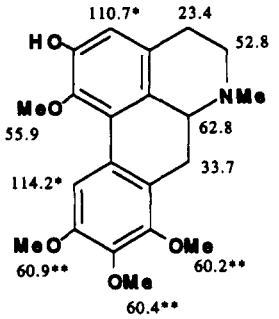




577. ACUTIFOLIDINE

$C_{21}H_{25}O_5N$ 371.1731
Mp: 183–184° (176)
[α]D: +77° (*c*=1, MeOH) (176)
Uv: 280 (4.23), 301 (4.22), 310sh (176)
Ir: (KBr) 3080, 2830, 2800, 2720, 1608, 1516, 1370, 1260, 1052 (176)
^{1}H nmr: (90 MHz) (176)
^{13}C nmr: (176)
Ms: 371 (M^+), 370, 356, 340, 328, 313, 180 (176)
Sources: Ranunculaceae: *Thalictrum acutifolium* (176)



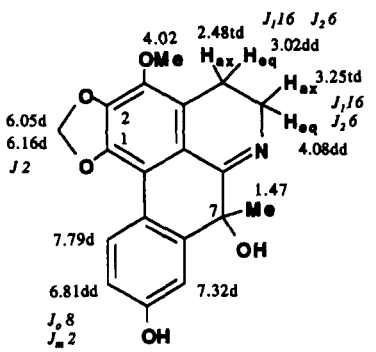


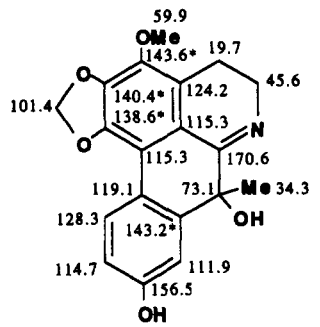
149.3, 149.0, 145.5, 145.2, 144.7 (C-1, 2, 8, 9, 10)

130.5, 129.9, 123.5, 123.0, 122.8 (C-1a, 1b, 3a, 7a, 11a)

7-Hydroxy-7-methylaporphines

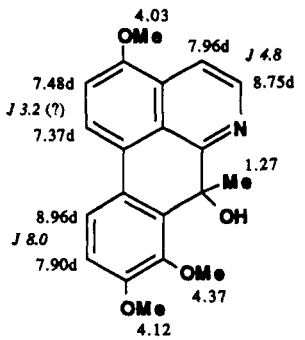
578. 3-METHOXYGUATTESCIDINE





$C_{19}H_{17}O_5N$ 339.1105
[α]D: +39° (*c*=0.23, MeOH) (189)
Uv: 240sh (3.98), 268 (4.30) (189)
^{1}H nmr: (200 MHz) (189)
^{13}C nmr: (189)
Ms: 339 (M^+, 13), 325 (21), 324 (100) (189)
Sources: Annonaceae: *Guatteria foliosa* (189)

579. SINOMENDINE*

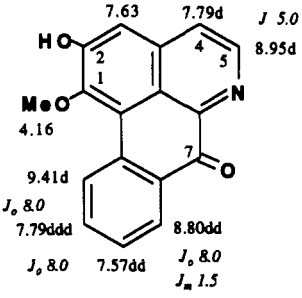


$C_{20}H_{19}O_4N$ 337.1313
Mp: 204–206° (60)
Uv: 234 (4.15), 255 (4.31), 380 (3.67) (60)
Ir: (KBr) 3400, 1610 (60)
^{1}H nmr: (60)
^{13}C nmr: (60)
Ms: 337 (M^+), 322, 306, 294, 278 (60)
Sources: Menispermaceae: *Sinomenium acutum* (60)

*This structural assignment is questionable, and requires confirmation.

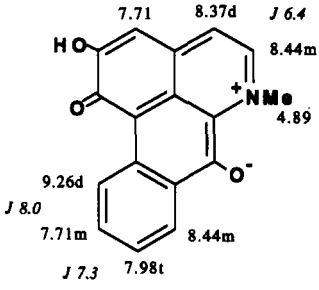
Oxoaporphines

580. OXOASIMILOBINE
(7-Oxodehydroasimilobine)



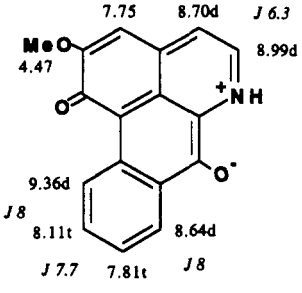
$C_{17}H_{11}O_3N$ 277.0738
Uv: 221sh, 236 (4.92), 267 (4.82), 274sh, 310 (4.28), 380 (4.26), 411 (4.28); [(HCl) 249, 275, 338–350, 389, 462] (1)
Ir: (KBr) 3470, 1660 (1)
^{1}H nmr: (C_5D_5N, 360 MHz) (1)
Ms: 277 (M^+, 90), 234 (100), 206 (11), 177 (14), 151 (22), 150 (11) (1)
Sources: Annonaceae: *Monocyclanthus vignei* (1)

581. *N*-METHYLLIRIODENDRONINE



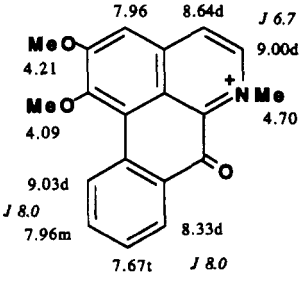
$C_{17}H_{11}O_3N$ 277.0738
Mp: >300° (214)
Uv: 270 (3.56), 308 (3.60), 432 (2.95), 508 (3.02), 548 (2.87), 556 (2.87); [(HCl) 254 (3.63), 286 (3.59), 336 (2.91), 400 (2.98), 484 (2.76), 496 (2.74), 502 (2.73)] (214)
Ir: (KBr) 1630, 1610, 1580 (214)
^{1}H nmr: (CF_3COOH, 300 MHz) (214)
Ms: 277 (M^+, 100), 276 (17), 267 (17), 249 (85), 235 (35), 178 (25), 163 (35) (214)
Sources: Synthesis (214)

582. 2-*O*-METHYLLIRIODENDRONINE



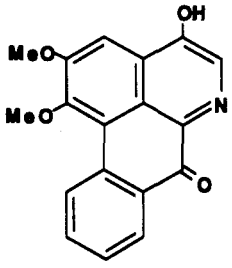
$C_{17}H_{11}O_3N$ 277.0738
Mp: 265–270° (dec) (214)
Uv: 243 (4.13), 269 (3.98), 309 (4.20), 424 (3.59), 592 (3.44); [(HCl) 251 (4.28), 286 (4.27), 396 (3.63), 488 (3.47)] (214)
Ir: (KBr) 1625, 1605, 1575 (214)
^{1}H nmr: ($CDCl_3/CF_3COOD$ 5%, 300 MHz) (214)
Ms: 277 (M^+, 100), 248 (25), 234 (11), 219 (11), 189 (8) (214)
Sources: Synthesis (214)

583. *N*-METHYLLYSICAMINE



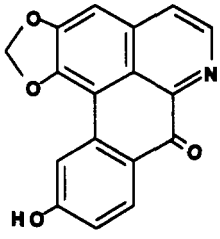
$C_{19}H_{16}O_3N^+ X^-$ 306.1129
Mp: 140° (dec) (I^-) (214)
Uv: 225 (4.71), 238 (4.62), 250 (4.63), 279 (4.58), 376 (3.64), 385 (3.66), 456 (3.44) (I^-) (214)
Ir: (KBr) 1650, 1620, 1600 (I^-) (214)
^{1}H nmr: (DMSO-d_6, 300 MHz) (I^-) (214)
Sources: Synthesis (214)

584. TELIKOVINE



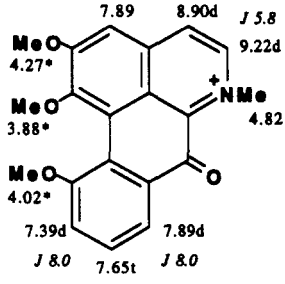
$C_{18}H_{13}O_4N$ 307.0844
Data not available
Sources: Menispermaceae: *Telitoxicum krukovii* (195)

585. 10-HYDROXYLIRIODENINE



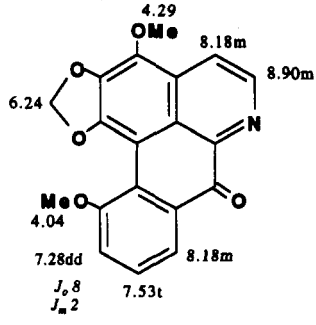
$C_{17}H_9O_4N$ 291.0531
Data not available
Sources: Annonaceae: *Polyalthia* sp. (114)

586. 1,2,11-TRIMETHOXY-*N*-METHYL-OXOAPORPHINE
(1,2,11-Trimethoxy-*N*-methyloxoaporphinium cation)
(1,2,11-Trimethoxyoxoaporphine methiodide)



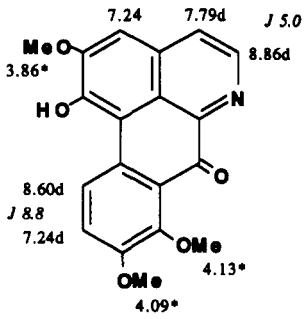
$C_{20}H_{18}O_4N^+ X^-$ 336.1235
^{1}H nmr: (250 MHz) (12)
Sources: Synthesis (12)

587. 3-METHOXYOXOPUTERINE



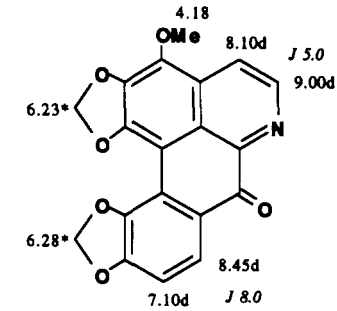
$C_{19}H_{13}O_5N$ 335.0793
Uv: 212 (4.13), 250 (3.91), 288 (4.06), 385 (3.22), 453 (3.43) (189)
^{1}H nmr: (200 MHz) (189)
Ms: 335 (M^+, 100), 320 (29), 290 (10) (189)
Sources: Annonaceae: *Guatteria foliosa* (189)

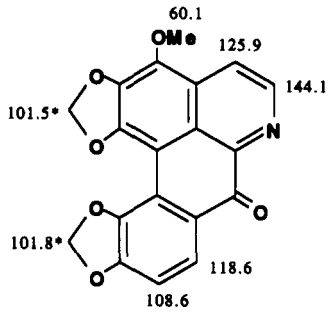
588. ANNOLATINE



$C_{19}H_{15}O_5N$ 337.0949
Uv: 205 (4.44), 218sh (4.40), 249 (4.22), 268sh (4.13), 300sh (3.83), 348 (3.78), 406 (3.73) (283)
Ir: (Nujol) 3400, 1650 (283)
^{1}H nmr: (200 MHz) (283)
Ms: 337 (M^+), 322, 311, 279, 251, 207, 189, 161 (283)
Sources: Annonaceae: *Annona montana* (283)

589. OXODUOCINE

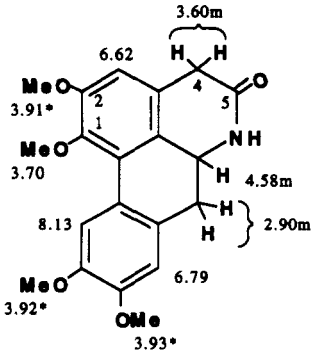




$C_{19}H_{11}O_6N$ 349.0585
Mp: 265° (221)
Uv: 220 (3.89), 269 (3.77), 284 (3.77), 342 (3.45), 362 (3.46) (221)
Ir: (KBr) 3440, 3120, 3060, 3020, 2980, 2925, 1655, 1585, 1460, 1415, 1360, 1310, 1270, 1220, 1115, 1080, 980, 820 (221)
^{1}H nmr: (C_5D_5N, 300 MHz) (221)
^{13}C nmr: (221)
Ms: 349 (M^+, 100), 335 (20), 334 (41), 304 (67), 276 (88), 274 (20), 248 (42), 220 (25), 218 (42), 190 (33), 169 (67) (221)
Sources: Lauraceae: *Lindera myrrha* (221)

5-Oxo and 4,5-Dioxoaporphines*

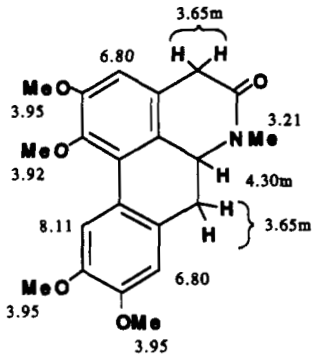
590. 5-OXONORGLAUCINE



$C_{20}H_{21}O_5N$ 355.1418
Mp: 253–254° (82)
Ir: (KBr) 3190, 2920, 1680, 1600, 1540, 1260, 1110 (82)
^{1}H nmr: (85)
^{13}C nmr: 36.3, 37.2, 51.4, 54.0, 55.8, 55.9, 56.0, 109.6, 111.2, 111.8, 123.4, 124.4, 125.8, 126.5, 127.3, 145.2, 148.1, 148.6, 153.5 (82)
Ms: 356 (100), 355 (M^+, 75), 231 (19), 154 (37), 137 (81), 109 (96) (82)
Sources: Synthesis (82, 84, 85)

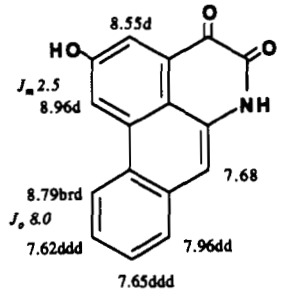
*Aporphinediones exist in the highly conjugated enolate form, as shown by their dark color and complex uv spectra. The quinodal form is better stabilized by resonance. This remark can also be made for the 4,5-dioxo-1-azaaporphinoids.

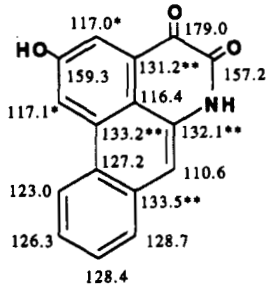
591. 5-OXOGLAUCINE



$C_{21}H_{23}O_5N$ 369.1575
Mp: 260–262° (82)
^{1}H nmr: (82)
Ms: 369 (M^+, 6), 340 (5), 197 (21), 135 (23), 97 (100) (82)
Sources: Synthesis (82, 85)

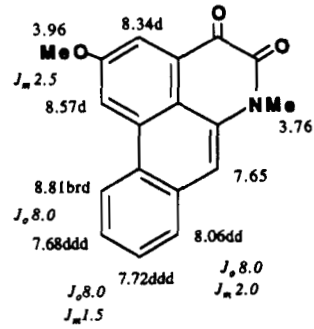
592. 1-DEMETHOXY-4,5-DIOXODEHYDROASIMILOBINE (6a,7-Dehydro-2-hydroxy-4,5-dioxonoraporphine)



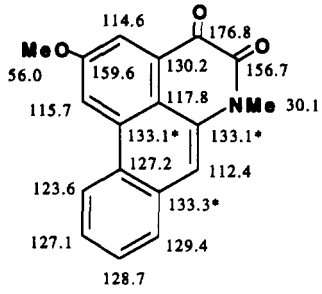


$C_{16}H_9O_3N$ 263.0582
Uv: 218 (4.33), 244sh, 257 (4.39), 305sh, 314 (3.83), 326 (3.86), 464 (3.78) (1)
Ir: (KBr) 3370, 1691, 1680 (1)
^{1}H nmr: (C_5D_5N, 360 MHz) (1)
^{13}C nmr: (C_5D_5N) (1)
Ms: 263 (M^+, 100), 236 (11), 235 (64), 206 (16), 152 (16), 151 (11) (1)
Sources: Annonaceae: *Monocyclanthus vignei* (1)

593. *O,N*-DIMETHYL-1-DEMETHOXY-4,5-DIOXODEHYDROASIMILOBINE (6a,7-Dehydro-2-methoxy-4,5-dioxoaporphine, 1-demethoxycepharadione B)



$C_{18}H_{13}O_3N$ 291.0895
Uv: 232sh, 244 (4.39), 288sh, 300 (3.81), 311 (3.84), 444 (3.73) (1)
Ir: (KBr) 1666 (1)
^{1}H nmr: (C_5D_5N, 360 MHz) (1)
^{13}C nmr: (C_5D_5N) (1)
Ms: 291 (M^+, 100), 264 (16), 263 (93), 248 (16), 220 (6), 192 (7), 179 (9), 165 (20), 163 (13), 132 (8) (1)
Sources: Synthesis (1)

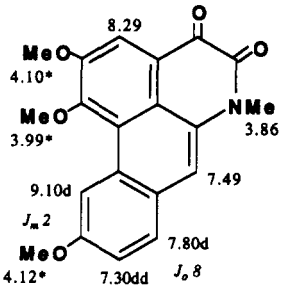


594. 7-CHLORO-NORCEPHARADIONE B*
(7-Chloro-6-demethylcepharadione B)

$C_{18}H_{12}O_4NCl$ 341.5335
Mp: 341–342° (130)
Uv: 214, 245, 276sh, 303, 316, 439 (130)
Ir: (KBr) 3246, 2928, 2850, 1686, 1666, 1372, 1250, 1132, 1014, 936 (130)
^{1}H nmr: (300 MHz) (130)
Ms: 343 (33), 341 (M^+, 100), 315 (19), 313 (55), 300 (7), 298 (21), 263 (33), 235 (69), 164 (30), 99 (20) (130)
Sources: Saururaceae: *Houttuynia cordata* (130)

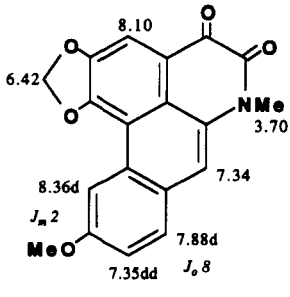
*Might be an artifact.

595. TUBEROSINONE C



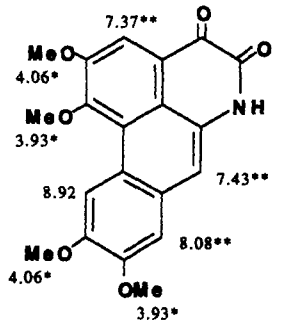
$C_{20}H_{17}O_5N$ 351.1105
Mp: 254–256° (309)
^{1}H nmr: (309)
Ms: 351 (M^+), 308, 293, 280, 265 (309)
Sources: Aristolochiaceae: *Aristolochia tuberosa* (309)

596. TUBEROSINONE B



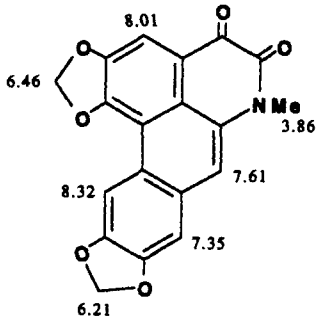
$C_{19}H_{13}O_5N$ 335.0793
Mp: 151–153° (309)
^{1}H nmr: (309)
Ms: 335 (M^+), 307, 279 (309)
Sources: Aristolochiaceae: *Aristolochia tuberosa* (309)

597. NORPONTEVEDRINE



$C_{20}H_{17}O_6N$ 367.1055
Mp: 284–286° (38)
Uv: 238 (4.60), 313 (3.99), 325 (4.24), 478 (3.95) (38)
Ir: (KBr) 1700 (38)
^{1}H nmr: (DMSO-d_6) (38)
Ms: 367 (M^+, 100) (38)
Sources: Synthesis (12, 37, 38, 39)

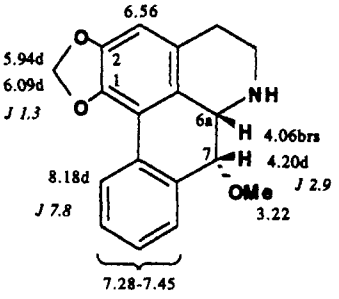
598. STEPHADIONE



$C_{19}H_{11}O_6N$ 349.0585
Mp: >300° (244)
Uv: 239 (4.54), 271 (3.99), 312.5 (4.13), 326 (4.47), 366 (4.13) (244)
Ir: (KBr) 3077, 3029, 2916, 1647, 1588, 1499, 1467, 1363, 1305, 1247, 1191, 1079, 1045, 939 (244)
^{1}H nmr: (244)
Ms: 349 (M^+, 78), 321 (100), 304 (31), 292 (16), 263 (20), 207 (8), 206 (62), 190 (14) (244)
Sources: Menispermaceae: *Stephania tetrandra* (244)

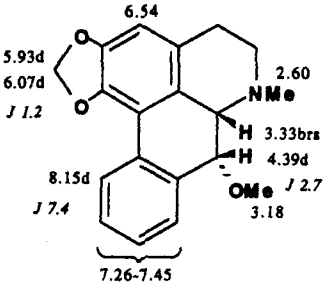
7- and/or 4-Oxygenated Aporphines

599. 7-*O*-METHYLNORUSHINSUNINE
(7-*O*-Methylmichelalbine)



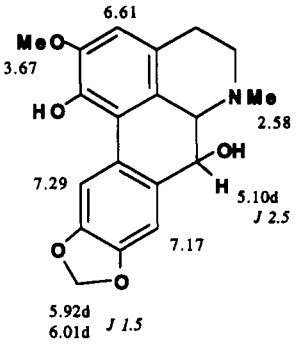
$C_{18}H_{17}O_3N$ 295.1207
^{1}H nmr: (300 MHz) (299)
Ms: 295 (M^+, 59), 280 (100), 263 (6), 251 (14) (299)
Sources: Synthesis (299)

600. 7-*O*-METHYLUSHINSUNINE



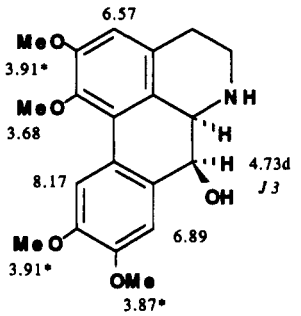
$C_{19}H_{19}O_3N$ 309.1364
Mp: 157–158° (299)
[α]D: −169° (c=1, MeOH)
Uv: 231 (4.15), 245 (4.09), 273 (4.30), 280sh (4.16), 318 (3.71) (299)
Ir: (KBr) 1044, 937 (299)
^{1}H nmr: (300 MHz) (299)
Ms: 309 (M^+, 26), 295 (21), 294 (100), 277 (4), 251 (17), 236 (5) (299)
Sources: Synthesis (299)

601. 7-HYDROXYDOMESTICINE
(Hexahydronandazurine)



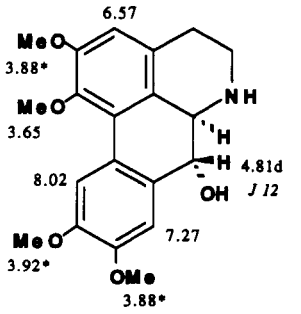
$C_{19}H_{19}O_5N$ 341.1262
Mp: 230–234° (152)
Uv: 221 (4.86), 239sh (4.11), 288 (4.08), 310 (4.16) (152)
^{1}H nmr: (C_5D_5N) (152)
Sources: Synthesis (152)

602. *CIS*-7-HYDROXY-1,2,9,10-TETRAMETHOXYNORAPORPHINE
(*cis*-7-Hydroxynorglaucine)



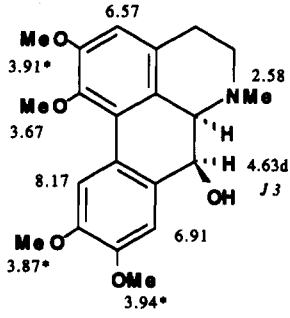
$C_{20}H_{23}O_5N$ 357.1575
Mp: 130° (dec) (168)
Uv: 237sh (4.34), 285 (4.13), 298 (4.11), 310sh (3.99) (168)
Ir: (KBr) 3430, 1515, 1115 (168)
^{1}H nmr: (200 MHz) (168)
Ms: 357 (M^+, 39), 356 (26), 355 (19), 340 (37), 339 (41), 368 (26), 327 (37), 326 (48), 325 (22), 60 (82), 45 (100) (168)
Sources: Synthesis (enantiomeric mixture) (168)

603. *TRANS*-7-HYDROXY-1,2,9,10-TETRAMETHOXYNORAPORPHINE
(*trans*-7-Hydroxynorglaucine)



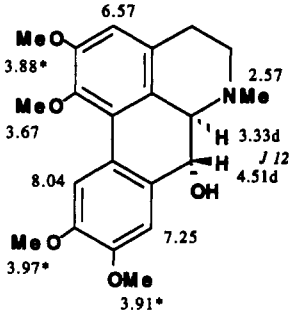
$C_{20}H_{23}O_5N$ 357.1575
Mp: 152–153° (168)
Uv: 237sh (4.31), 274sh (3.99), 282 (4.08), 300 (4.08), 315sh (3.90) (168)
Ir: (KBr) 3420, 2840, 1517, 1120 (168)
^{1}H nmr: (200 MHz) (168)
Ms: 357 (M^+, 26), 356 (21), 355 (32), 340 (30), 339 (25), 327 (46), 326 (39), 324 (25), 45 (100) (168)
Sources: Synthesis (enantiomeric mixture) (168)

604. *CIS*-7-HYDROXY-1,2,9,10-TETRAMETHOXYAPORPHINE
(*cis*-7-Hydroxyglaucine)



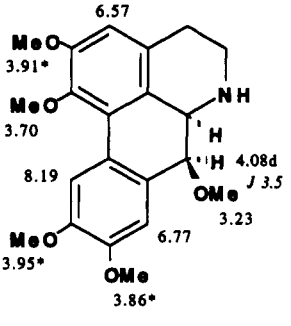
$C_{21}H_{25}O_5N$ 371.1731
Mp: 139–145° (168)
Uv: 219 (4.56), 237sh (4.33), 284 (4.17), 296 (4.15), 307sh (4.04) (168)
Ir: (KBr) 3510, 1605, 1585, 1520 (168)
^{1}H nmr: (200 MHz) (168)
Ms: 371 (M^+, 47), 370 (31), 369 (87), 354 (100), 340 (82), 206 (55) (168)
Sources: Synthesis (enantiomeric mixture) (168)

605. *TRANS*-7-HYDROXY-1,2,9,10-TETRAMETHOXYAPORPHINE
(*trans*-7-Hydroxyglaucine)



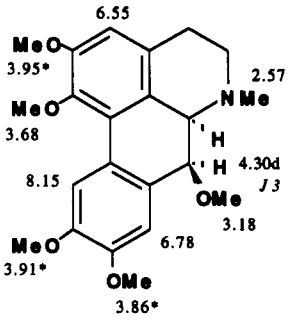
$C_{21}H_{25}O_5N$ 371.1731
Mp: 136–138° (168)
Uv: 218 (4.53), 238sh (4.31), 281 (4.12), 300 (4.14), 314sh (3.98) (168)
Ir: (KBr) 3450, 1585, 1515, 1120 (168)
^{1}H nmr: (200 MHz) (168)
Ms: 371 (M^+, 44), 370 (17), 369 (5), 341 (22), 340 (100), 206 (62) (168)
Sources: Synthesis (enantiomeric mixture) (168)

606. *CIS*-1,2,7,9,10-PENTAMETHOXYNORAPORPHINE
(*cis*-7-Methoxynorglaucine)



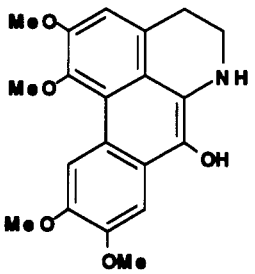
$C_{21}H_{25}O_5N$ 371.1731
Mp: 169–172° (168)
Uv: 219 (4.55), 235sh (4.40), 286 (4.18), 297 (4.18) (168)
Ir: (KBr) 3460, 1520, 1115 (168)
^{1}H nmr: (200 MHz) (168)
Ms: 371 (M^+, 6), 356 (18), 340 (3), 327 (5), 43 (100) (168)
Sources: Synthesis (enantiomeric mixture) (168)

607. *CIS*-1,2,7,9,10-PENTAMETHOXYAPORPHINE
(*cis*-7-Methoxyglaucine)



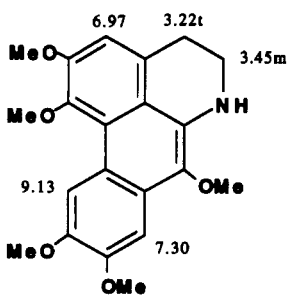
$C_{22}H_{27}O_5N$ 385.1889
Mp: 186–191° (168)
Uv: 218 (4.61), 236sh (4.38), 285 (4.20), 298 (4.18) (168)
Ir: (KBr) 1605, 1520, 1115 (168)
^{1}H nmr: (200 MHz) (168)
Ms: 385 (M^+, 21), 383 (26), 370 (100), 368 (78) (168)
Sources: Synthesis (enantiomeric mixture) (168)

608. 7-HYDROXY-1,2,9,10-TETRAMETHOXYDEHYDRONORAPORPHINE
(7-Hydroxydehydronorglaucine)



$C_{20}H_{21}O_5N$ 355.1418
Data not available
Sources: Synthesis (168)

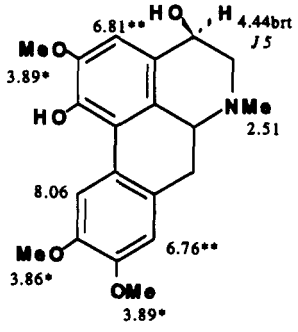
609. 1,2,7,9,10-PENTAMETHOXYDEHYDRONORAPORPHINE
(7-Methoxydehydronorglaucine)



5 methoxy at 3.88, 3.92, 4.01, 4.07, and 4.11

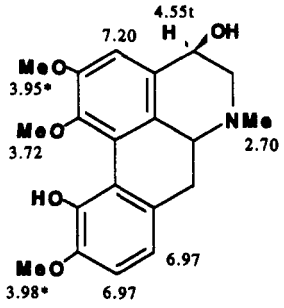
$C_{21}H_{23}O_5N$ 369.1575
Mp: 114° (dec) (168)
Ir: (KBr) 3390, 1620, 1600, 1510 (168)
^{1}H nmr: (200 MHz) (168)
Sources: Synthesis (168)

610. 4β-HYDROXYTHALIPORPHINE



$C_{20}H_{23}O_3N$ 357.1575
Mp: 167–168° (dec) (120)
Ir: (KBr) 3375 (120)
^{1}H nmr: (100 MHz) (120)
Ms: 357 (M^+), 339, 338, 337 (100), 332 (120)
Sources: Synthesis (120)

611. RHOPALOTINE
(4β-Hydroxyisocorydine, crabbine*)

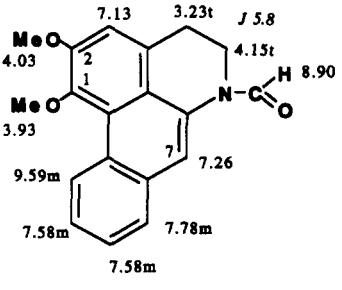


$C_{20}H_{23}O_5N$ 357.1575
Mp: 191° (237)
[α]D: +162° (*c*=0.2, MeOH) (237)
Uv: 220(4.38), 265(3.93), 300(3.66)(296)
Ir: (KBr) 3250, 3000, 2950, 2905, 2860, 2840, 1590, 1440, 1230, 1140, 850 (296)
^{1}H nmr: (237); also in CD_3OD and in CD_3OD+NaOD (296)
^{13}C nmr: (296)
Ms: 357 (M^+, 72), 342 (100), 340 (45), 326 (76), 314 (38) (237)
Sources: Fumariaceae: *Corydalis lutea* (296)
Papaveraceae: *Papaver rhopalothece* (237)

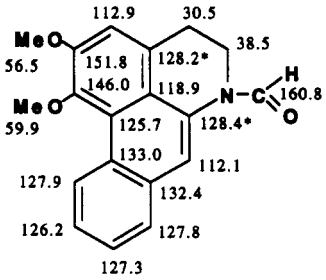
*Crabbine described in (296) as a new compound is identical with rhopalotine, although its specific rotation was not given.

Dehydroaporphines (6a,7-Didehydroaporphines)

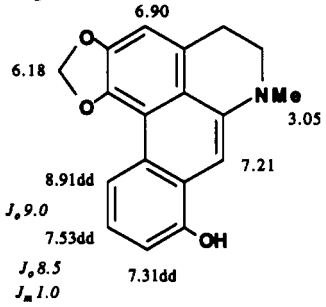
612. *N*-DEMETHYL-*N*-FORMYLDEHYDRONUCIFERINE
(*N*-Formyldehydronornuciferine)



$C_{19}H_{17}O_3N$ 307.1207
Mp: 140° (208)
Uv: 253, 317, 348, 367 (208)
Ir: (KBr) 1680 (208)
^{1}H nmr: (400 MHz) (208)
^{13}C nmr: (208)
Ms: 307 (M^+) (208)
X-ray: (208)
Sources: Menispermaceae: *Sinomenium acutum* (208)

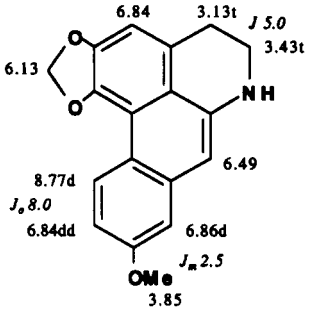


613. 8-HYDROXYDEHYDROROEMERINE

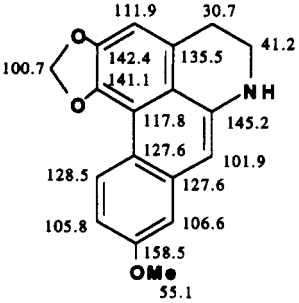


$C_{18}H_{15}O_3N$ 293.1051
Mp: 172–173° (281)
Uv: 215, 275, 330 (281)
Ir: (KBr) 3320, 1622, 1600, 1590, 1270 (281)
^{1}H nmr: (281)
Ms: 293 (M^+) (281)
Sources: Menispermaceae: *Stephania dicentzinifeza* (281)

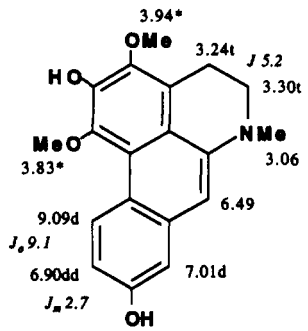
614. DEHYDROXYLOPINE



$C_{18}H_{15}O_3N$ 293.1051
Mp: 125–126° (131)
Uv: 208 (4.14), 244sh (4.14), 258sh (4.18), 267 (4.21), 290sh (3.63), 338 (3.48), 380sh (3.20) (131)
^{1}H nmr: (90 MHz) (132)
^{13}C nmr: (131)
Ms: 293 (M^+, 100), 292 (14), 291 (12), 250 (11), 191 (18), 149 (38) (132)
Sources: Annonaceae: *Xylopia vieillardi* (132)
Synthesis (131)

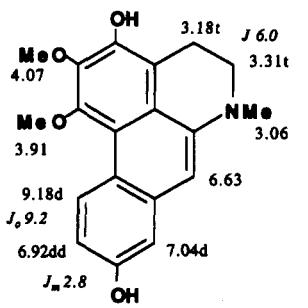


615. 2,9-DIHYDROXY-1,3-DIMETHOXY-6a,7-DEHYDROAPORPHINE



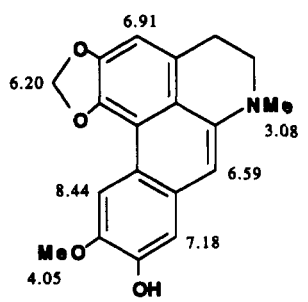
$C_{19}H_{19}O_4N$ 325.1313
Mp: 155–157° (40)
Uv: 216, 245sh, 265, 330 (40)
Ir: (KBr) 3330, 2895, 2790, 1585, 1435, 1300 (40)
^{1}H nmr: (250 MHz) (40)
Ms: 325 (M^+, 100), 310 (95), 264 (29), 210 (26) (40)
Sources: Synthesis (40)

616. 3,9-DIHYDROXY-1,2-DIMETHOXY-6a,7-DEHYDROAPORPHINE



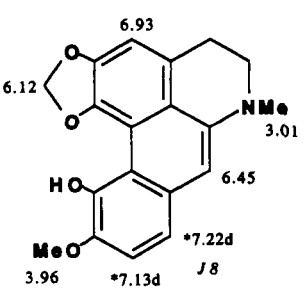
$C_{19}H_{19}O_4N$ 325.1313
Mp: 140–142° (40)
Uv: 210, 240sh, 262, 332 (40)
Ir: (KBr) 3200, 2880, 2800, 1590, 1435, 1300, 1270, 1160 (40)
^{1}H nmr: (250 MHz) (40)
Ms: 325 (M^+, 100), 310 (28), 296 (12), 295 (14), 293 (14), 292 (12), 278 (10), 267 (10) (40)
Sources: Synthesis (40)

617. DEHYDROCASSYTHICINE



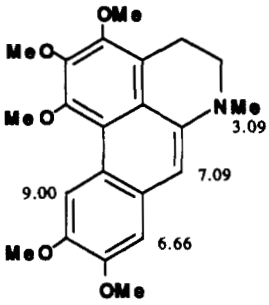
$C_{19}H_{17}O_4N$ 323.1156
Mp: 244° (252)
Ir: (KBr) 3412, 2880, 1600, 1205 (252)
^{1}H nmr: (100 MHz) (252)
Ms: 323 (M^+, 79), 308 (100) (252)
Sources: Synthesis (252)

618. DEHYDROBULBOCAPNINE



$C_{19}H_{17}O_4N$ 323.1156
Mp: 119–120° (97)
Uv: 244 (4.51), 266 (4.56), 310sh (3.91), 339 (4.11), 402 (3.57) (97)
^{1}H nmr: (100 MHz) (97)
Ms: 323 (M^+, 100), 308 (90), 280 (23), 222 (18) (97)
Sources: Synthesis (97)

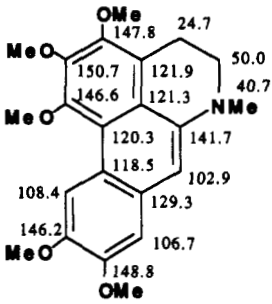
619. DEHYDROTHALICSIMIDINE



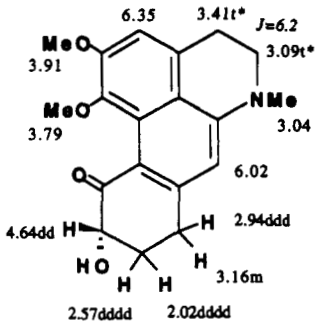
4 methoxy at 3.91 (6H) and 4.05 (9H)

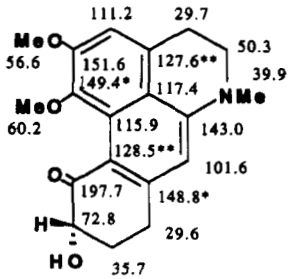
$C_{22}H_{25}O_5N$ 383.1731
Mp: 127–128° (291)
Uv: 220 (4.21), 257 (4.55), 270 (4.53), 335 (3.98) (291)
Ir: (KBr) 2980, 2960, 1620, 1590, 1540, 1250, 1120 (291)
^{1}H nmr*: (270 MHz) (291)
^{13}C nmr: (291)
Ms: 383 (M^+, 100), 309 (30), 209 (12), 166 (10), 161 (15) (291)
Sources: Ranunculaceae: *Thalictrum ichengense* (291,292)

*H-7 and H-8 assignments should probably be reversed.



620. ARTACINATINE



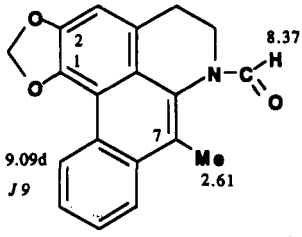


$C_{19}H_{21}O_4N$ 327.1469
Mp: 160–162° (284)
[α]D: 0° (*c*=0.1, MeOH) (284)
Uv: 214 (5.03), 261 (4.92), 290sh (4.55), 344sh (4.43), 382 (4.79) (284)
Ir: ($CHCl_3$) 3435, 1650, 1589, 1512, 1410, 1297, 1268, 1112, 1065, 1002, 913 (284)
^{1}H nmr*: (250 MHz) (284)
^{13}C nmr: (284)
Ms: 328 (10), 327 (M^+, 51), 309 (9), 284 (19), 283 (100), 268 (22), 222 (5), 57 (6) (284)
X-ray: (284)
Sources: Annonaceae: *Artabotrys uncinatus* (284)

*Coupling constants given in (284).

7-Methyldehydroaporphines

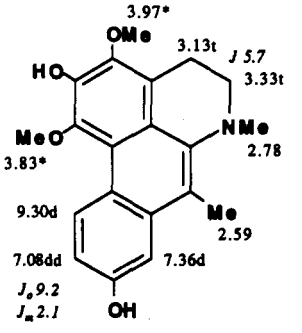
621. 7-METHYL-*N*-FORMYLDEHYDROANONAINE*



$C_{19}H_{15}O_3N$ 305.1051
Uv: 253, 288, 325, 357, 376 (11)
Ir: (KBr) 1680 (11)
^{1}H nmr: (11)
Ms: 305 (M^+, 100) (11)
Sources: Synthesis (11)

*This structure has been erroneously given to trichoguattine **478** (11).

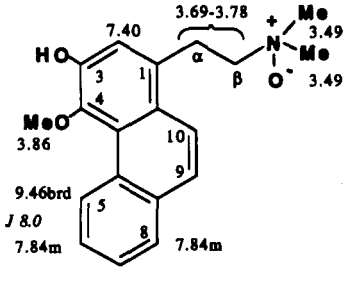
622. ISOGOUDOTIANINE



$C_{20}H_{21}O_4N$ 339.1469
Mp: 157–158° (40)
Uv: 215, 232sh, 268, 287sh, 327 (40)
Ir: (KBr) 1590, 1435, 1410, 1380, 1370, 1270, 1160 (40)
^{1}H nmr: (250 MHz) (40)
Ms: 339 (M^+, 100), 324 (47) (40)
Sources: Synthesis (40)

Phenanthrenes

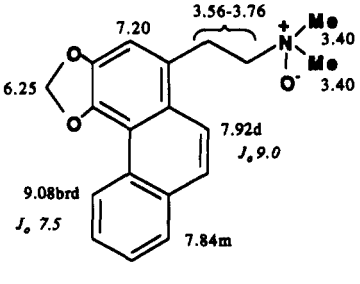
623. ARGENTININE *N*-OXIDE



3 aromatic H at 7.56-7.66

$C_{19}H_{21}O_3N$ 311.1520
Uv: 231 (4.00), 249sh, 255 (4.21), 277sh, 300sh, 310 (3.62), 345 (3.00), 362 (2.96) (1)
Ir: (KBr) 3390, 2953, 1600, 1444, 1298, 1003, 819, 756 (1)
^{1}H nmr: (360 MHz) (1)
Ms: 250 (100), 235 (12), 217 (64), 189 (51), 178 (18), 94 (16), 61 (12), 60 (16), 58 (21) (1)
Sources: Annonaceae: *Monocyclanthus vignei* (1)

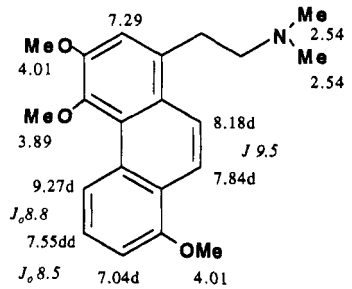
624. STEPHENANTHRINE *N*-OXIDE

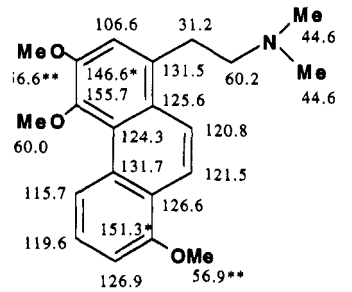


3 aromatic H at 7.57-7.65

$C_{19}H_{19}O_3N$ 309.1364
Uv: 238 (4.47), 248 (4.52), 257sh, 283 (4.07), 314sh, 320 (3.87), 350 (3.38), 369 (3.35) (1)
Ir: (KBr) 2922, 1598, 1455, 1284, 1049, 818, 753 (1)
^{1}H nmr: (360 MHz) (1)
Ms: 248 (100), 218 (18), 217 (25), 189 (70), 188 (28), 94 (32), 58 (20) (1)
Sources: Annonaceae: *Monocyclanthus vignei* (1)

625. FISSICESINE





$C_{21}H_{25}O_3N$ 339.1833

Uv: 224 (4.15), 240sh (4.26), 245 (4.38), 251sh (4.27), 258 (4.40), 292 (3.79), 306 (3.83), 319 (3.87), 348 (3.23), 366 (3.23) (286)

Ir: (Nujol) 1580 (286)

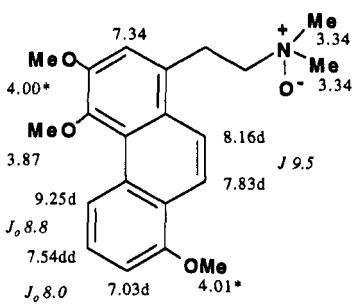
^{1}H nmr: (200 MHz) (286)

^{13}C nmr: (286)

Ms: 339 (M^+, 7), 281 (1), 256 (1), 167 (1), 58 (100) (286)

Sources: Annonaceae: *Fissistigma glaucescens* (286)

626. FISSICESINE *N*-OXIDE



$C_{21}H_{25}O_4N$ 355.1782

Uv: 225 (4.13), 247 (4.35), 253sh (4.24), 259 (4.36), 294 (3.75), 308 (3.80), 320 (3.85), 347 (3.21), 366 (3.21) (286)

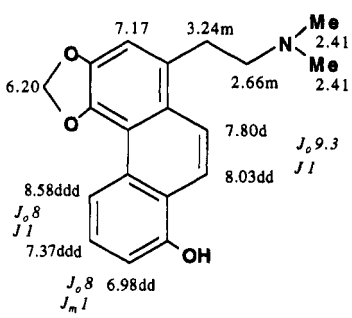
Ir: (Nujol) 1580 (286)

^{1}H nmr: (200 MHz) (286)

Ms: 355 (M^+, 11), 339 (18), 338 (9), 325 (37), 294 (44), 281 (100), 267 (35), 252 (19), 58 (72) (286)

Sources: Annonaceae: *Fissistigma glaucescens* (286)

627. 8-HYDROXYSTEPHENANTHRINE



$C_{19}H_{19}O_3N$ 309.1364

Uv: 218 (4.46), 239sh, 246sh, 254 (4.70), 297 (4.26), 314 (4.11), 327 (4.13), 338sh, 356 (3.68), 375 (3.71) (1)

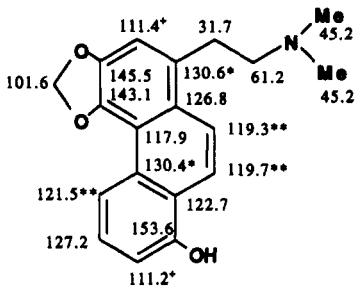
Ir: (KBr) 3435, 2954, 1594, 1445, 1370, 1288, 1064, 1051, 809, 758 (1)

^{1}H nmr: (CD_3OD, 360 MHz) (1)

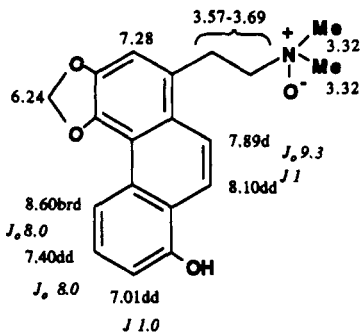
^{13}C nmr: (CD_3OD) (1)

Ms: 309 (M^+, 9), 251 (2), 165 (2), 58 (100) (1)

Sources: Annonaceae: *Monocyclanthus vignei* (1)



628. 8-HYDROXYSTEPHENANTHRINE *N*-OXIDE



$C_{19}H_{19}O_4N$ 325.1313

Uv: 216 (4.23), 240sh, 247sh, 254 (4.36), 297 (3.90), 313 (3.76), 327 (3.78), 356 (3.32), 375 (3.35) (1)

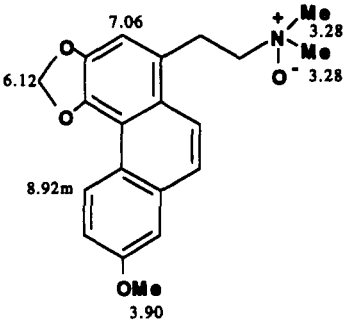
Ir: (KBr) 3400, 2923, 1595, 1456, 1285, 1057, 829, 758 (1)

^{1}H nmr: (CD_3OD, 360 MHz) (1)

Ms: 264 (100), 247 (7), 233 (14), 217 (6), 205 (12), 176 (23), 58 (22) (1)

Sources: Annonaceae: *Monocyclanthus vignei* (1)

629. ISOLAURELINE METHINE *N*-OXIDE
(*N*-Methylxylopine methine *N*-oxide)



4 aromatic H at 7.22-7.84

$C_{20}H_{21}O_4N$ 339.1469

Mp: 77–79° (187)

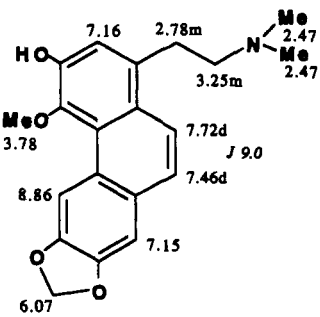
Uv: 215 (4.38), 236 (4.48), 256 (4.68), 258 (4.74), 278sh (4.03), 304 (4.08), 313 (4.08), 346 (3.54), 364 (3.56) (187)

^{1}H nmr: (60 MHz) (187)

Ms: 278 (M-61), 263, 247, 231, 205, 176 (187)

Sources: Synthesis (187)

630. 3-*O*-DEMETHYLTHALICTHUBERINE



$C_{20}H_{21}O_4N$ 339.1469

Mp: 182–184° (118)

Uv: 235, 260, 310, 320 (118)

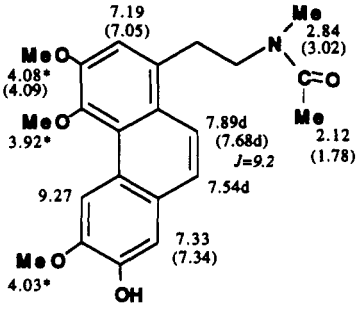
Ir: ($CHCl_3$) 3450, 2900, 1680, 1445, 1380, 1320, 1285, 1250, 1220, 1100, 1020, 980 (118)

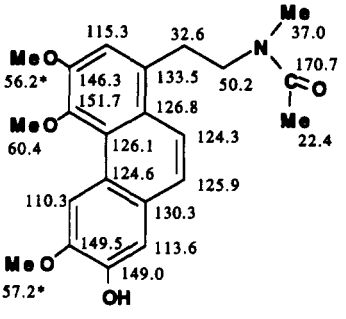
^{1}H nmr: (300 MHz) (118)

Ms: 339 (M^+, 33), 281 (6), 238 (12), 165 (8), 152 (15), 129 (31), 119 (36), 71 (15), 68 (18), 58 (100) (118)

Sources: Lauraceae: *Ocotea insularis* (118)

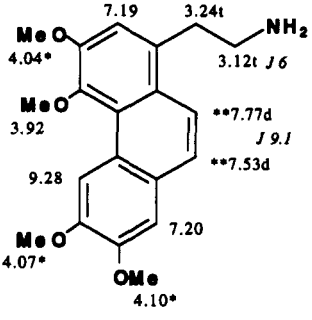
631. *N*-ACETYL-SECO-*N*-METHYLLAUROTETANINE





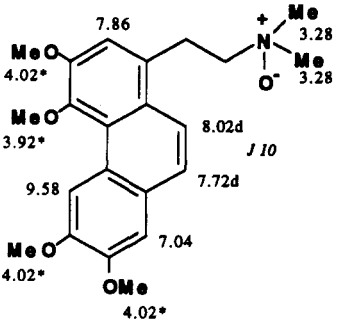
$C_{22}H_{25}O_5N$ 383.1731
Mp: 210–211° (99)
Uv: 225, 263, 364 (99)
Ir: (KBr) 1590 (99)
^{1}H nmr: (250 MHz) (Minor isomer values are mentioned between parentheses) (99); also in C_5D_5N (99)
^{13}C nmr: (C_5D_5N) (major isomer) (99)
Ms: 383 (M^+, 78), 312 (8), 311 (55), 310 (100), 298 (51), 297 (98), 295 (16), 282 (10), 281 (12), 263 (29), 253 (12), 251 (22), 211 (14), 152 (9) (99)
Sources: Magnoliaceae: *Aromadendron elegans* (99)

632. NORSECOGLAUCINE



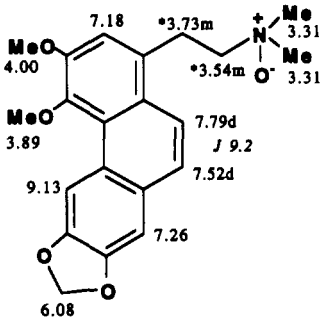
$C_{20}H_{23}O_4N$ 341.1626
^{1}H nmr: (250 MHz) (87)
Ms: 341 (M^+, 43), 312 (72), 311 (100), 297 (22) (87)
Sources: Synthesis (87)

633. GLAUCINE METHINE *N*-OXIDE



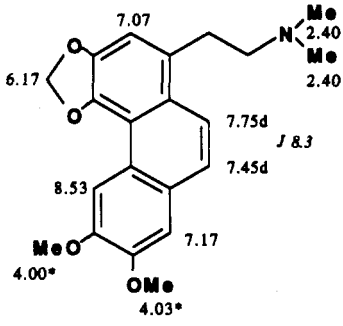
$C_{22}H_{27}O_5N$ 385.1889
Mp: 118–120° (187)
Uv: 216 (4.18), 234 (4.38), 254 (4.52), 258 (4.53), 278sh (3.96), 304 (4.00), 313 (4.00), 346 (3.46), 364 (3.48) (187)
^{1}H nmr: (60 MHz) (187)
Ms: 324 (M-61), 309, 293, 277 (187)
Sources: Synthesis (187)

634. THALICTHUBERINE *N*-OXIDE



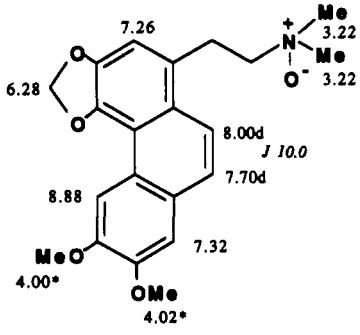
$C_{21}H_{23}O_5N$ 369.1575
Mp: 112–114° (24)
^{1}H nmr: (250 MHz) (24)
^{13}C nmr: 150.6 (s), 147.9 (s), 147.2 (s), 146.0 (s), 129.6 (s), 129.4 (s), 126.0 (d), 125.8 (s), 125.7 (s), 125.5 (s), 120.2 (d), 115.1 (d), 106.4 (d), 105.4 (d), 101.3 (t), 71.1 (t), 59.8 (q), 58.7 (q), 56.7 (q), 28.0 (t) (24)
Ms: 353 (15), 296 (26), 295 (15), 58 (100) (24)
Sources: Fumariaceae: *Platycapnos spicata* (24)

635. DICENTRINE METHINE



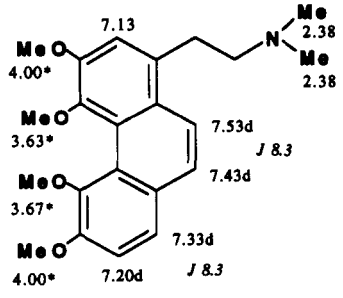
$C_{21}H_{23}O_4N$ 353.1626
Mp: 155–159° (185)
Uv: 268 (4.10), 288sh (3.50), 325 (3.32), 354 (2.85), 372 (2.85) (185)
^{1}H nmr: (60 MHz) (185)
Sources: Synthesis (185)

636. DICENTRINE METHINE *N*-OXIDE



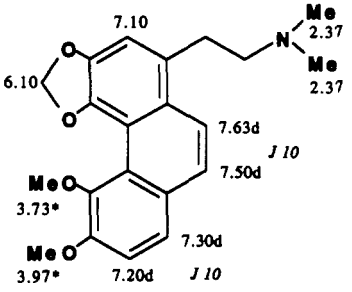
$C_{21}H_{23}O_5N$ 369.1575
Mp: 98–100° (187)
Uv: 214 (4.28), 236 (4.42), 254 (4.61), 258 (4.68), 279sh (4.00), 304 (4.04), 315 (4.05), 346 (3.51), 364 (3.52) (187)
^{1}H nmr: (60 MHz) (187)
Ms: 308 (M-61), 293, 277, 261, 247, 245, 139 (187)
Sources: Synthesis (187)

637. *O*-METHYLISOCORYDINE METHINE



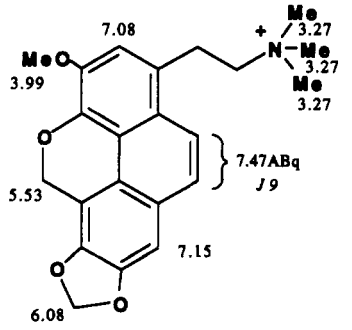
$C_{22}H_{27}O_4N$ 369.1940
Uv: 264 (4.22), 286sh (3.74), 320 (3.57), 344 (2.87), 368 (2.57) (185)
^{1}H nmr: (60 MHz) (185)
Ms: 369 (M^+, 100), 353 (6), 324 (25), 311 (33) (185)
Sources: Synthesis (185)

638. *O*-METHYLBULBOCAPNINE METHINE



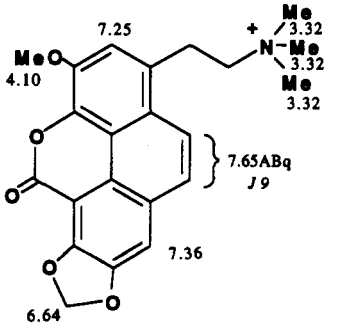
$C_{21}H_{23}O_4N$ 353.1626
Uv: 220 (3.75), 248sh (3.95), 262 (4.20), 304 (3.25), 325 (3.33), 370 (2.55), 390 (2.55) (185)
^{1}H nmr: (60 MHz) (185)
Ms: 353 (M^+, 100), 309 (21), 308 (84), 295 (11) (185)
Sources: Synthesis (185)

639. *N*-METHYLTHALIGLUCINE
(*N*-Methylthaliglucinium cation)



$C_{22}H_{24}O_4N^+ X^-$ 366.1704
Mp: 249–250° (Cl^-) (242)
Uv: 233sh (4.22), 260 (4.42), 272 (4.46), 282 (4.45), 295sh (4.23), 326 (3.82), 340 (3.71), 359 (3.32), 370 (3.32) (242)
^{1}H nmr: (60 MHz) (242)
Ms: 73 (100) (242)
Sources: Ranunculaceae: *Thalictrum polygamum* (242)

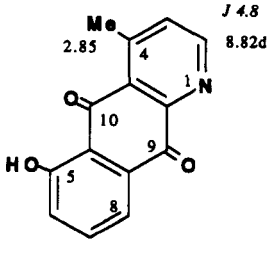
640. *N*-METHYLTHALIGLUCINONE
(*N*-Methylthaliglucinonium cation)



$C_{22}H_{22}O_5N^+ X^-$ 380.1497
Mp: 274–275° (242)
Uv: 225sh (4.15), 237 (4.26), 257sh (4.36), 267 (4.50), 288 (3.85), 313 (3.99), 333sh (3.71), 400 (3.61) (242)
Ir: 1735 (242)
^{1}H nmr: (60 MHz) (242)
Sources: Ranunculaceae: *Thalictrum polygamum* (242)

Azaanthracenes (Cleistopholine-type Alkaloids)

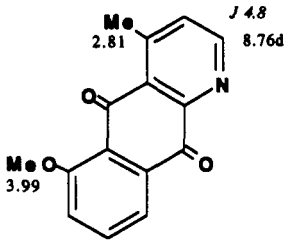
641. 5-HYDROXYCLEISTOPHOLINE



4 aromatic H at 7.19-7.89

$C_{14}H_9O_3N$ 239.0582
Mp: 218° (61)
Ir: 3640–3200, 1685, 1635 (61)
^{1}H nmr: (80 MHz) (61)
Ms: 239 (M^+, 100), 211, 183, 154 (61)
Sources: Synthesis (61)

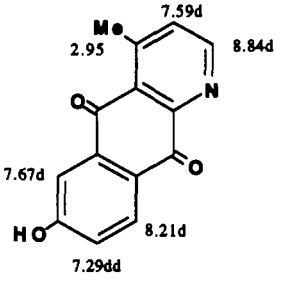
642. 5-METHOXYCLEISTOPHOLINE



4 aromatic H at 7.20-7.98

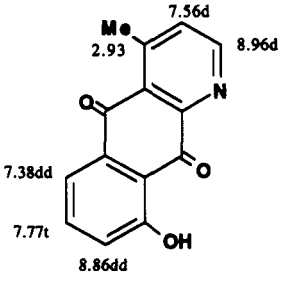
$C_{15}H_{11}O_3N$ 253.0738
Mp: 189° (61)
Uv: (KBr) 1680, 1665 (61)
^1H nmr: (80 MHz) (61)
Ms: 253 (M^+, 100), 252, 238, 235, 224, 207, 195, 167 (61)
Sources: Synthesis (61)

643. 6-HYDROXYCLEISTOPHOLINE



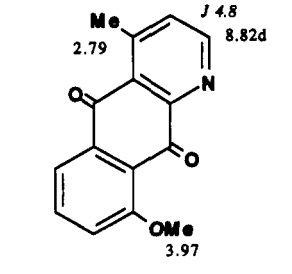
$C_{14}H_9O_3N$ 239.0582
Ir: ($CHCl_3$) 1680–1660 (148)
^1H nmr: (148)
Sources: Synthesis (148)

644. 8-HYDROXYCLEISTOPHOLINE



$C_{14}H_9O_3N$ 239.0582
Mp: 238° (61)
Ir: (KBr) 3640–3200, 1665, 1640 (61)
^1H nmr: (148)
Ms: 239 (M^+, 100), 211, 183, 154 (61)
Sources: Synthesis (61, 148)

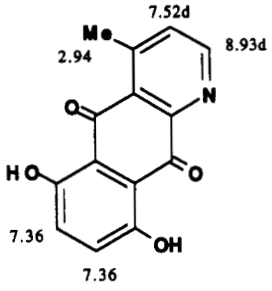
645. 8-METHOXYCLEISTOPHOLINE



4 aromatic H at 7.20-7.90

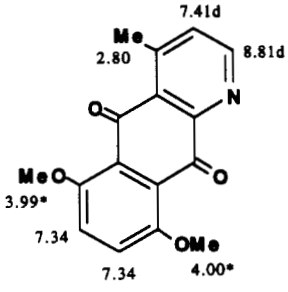
$C_{15}H_{11}O_3N$ 253.0738
Mp: 242° (61)
Ir: (KBr) 1680, 1665 (61)
^1H nmr: (80 MHz) (61)
Ms: 253 (M^+, 100), 252, 224, 195, 167 (61)
Sources: Synthesis (61)

646. 5,8-DIHYDROXYCLEISTOPHOLINE



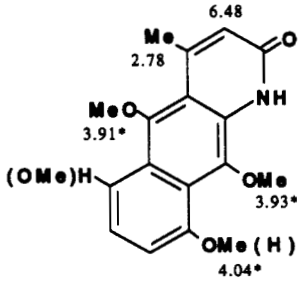
$C_{14}H_9O_4N$ 255.0531
Ir: 1630 (148)
^{1}H nmr: (148)
Sources: Synthesis (148)

647. 5,8-DIMETHOXYCLEISTOPHOLINE



$C_{16}H_{13}O_4N$ 283.0844
Ir: ($CHCl_3$) 1680 (148)
^{1}H nmr: (148)
Sources: Synthesis (148)

648. GEOVANINE

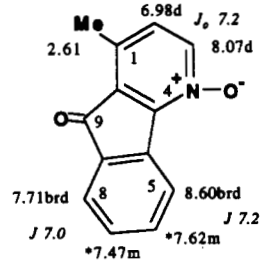


3 aromatic H at 6.91d, 7.35t and 7.77d (*J* 8.0)

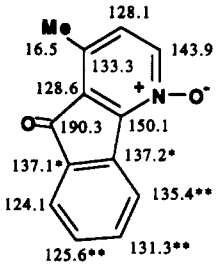
$C_{17}H_{17}O_4N$ 299.1157
Mp: 190–192° (72)
Uv: 242 (4.70), 282 (4.79), 293 (4.78), 331 (4.19), 348 (4.11) (72)
Ir: (KBr) 3390, 3110, 2890, 2810, 1650, 1580, 1550, 1500, 1465, 1450, 1360, 1250, 1060, 1000, 850, 760 (72)
^{1}H nmr: (270 MHz) (72)
Ms: 299 (M^+, 73), 298 (73), 285 (19), 284 (100), 270 (8), 269 (8), 268 (41), 252 (7) (72)
Sources: Annonaceae: *Annona ambotay* (72)

Azafluorenes (Onychine-type Alkaloids)

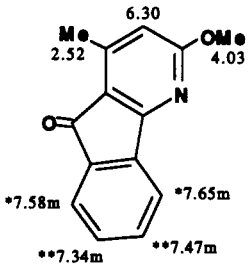
649. ONYCHINE *N*-OXIDE

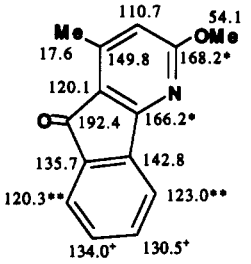


$C_{13}H_9O_2N$ 211.0633
Mp: 190° (dec) (31)
Ir: (KBr) 1705, 1595, 1430, 1280, 1200, 885, 820, 775, 750 (31)
^{1}H nmr: (100 MHz) (31)
^{13}C nmr: (31)
Ms: 211 (M^+, 100), 195 (68), 182 (20), 166 (16), 154 (13), 140 (13), 139 (15), 128 (12) (31)
Sources: Synthesis (31)



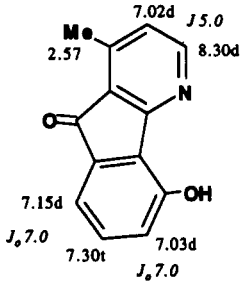
650. 3-METHOXYONYCHINE





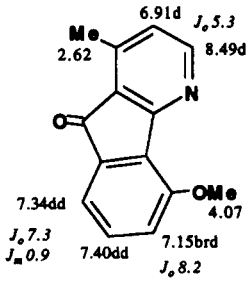
$C_{14}H_{11}O_2N$ 225.0789
Mp: 112–114° (31)
Ir: (KBr) 1705, 1600, 1565, 1450, 1365, 1195, 1145, 1135, 1035, 950, 895, 845, 750, 705 (31)
^{1}H nmr: (100 MHz) (31)
^{13}C nmr: (31)
Ms: 225 (M^+, 100), 224 (90), 210 (7), 196 (42), 195 (31), 194 (9), 167 (12), 166 (10) (31)
Sources: Synthesis (31)

651. 5-HYDROXYONYCHINE

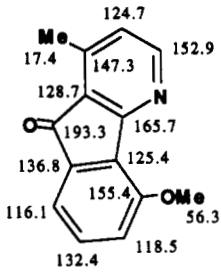


$C_{13}H_9O_2N$ 211.0633
Mp: 193° (256)
Uv: 206 (3.85), 230 (3.80), 249 (4.00), 298 (3.48), 310 (3.48), 340sh (2.98), 400sh (2.60); [(HCl) 206, 214sh, 248, 294, 324, 335sh, 400sh] (256)
^{1}H nmr: (CD_3OD, 500 MHz) (256)
Ms: 211 (M^+, 100), 184 (5), 183 (36), 155 (4), 154 (10), 128 (4), 127 (7), 105 (2) (256)
Sources: Synthesis (256)

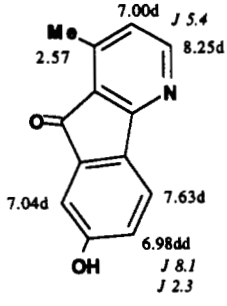
652. 5-METHOXYONYCHINE



$C_{14}H_{11}O_2N$ 225.0789
Mp: 180° (256)
Uv: 207 (4.16), 228 (4.15), 248 (4.33), 298 (3.85), 310 (3.85), 344sh (3.35); [(HCl) 212, 230, 248, 290sh, 322, 384] (256)
^{1}H nmr: (500 MHz) (256)
^{13}C nmr: (36)
Ms: 225 (M^+, 87), 224 (100), 211 (4), 197 (6), 196 (66), 195 (56), 194 (13), 167 (17), 166 (19), 141 (4), 140 (11), 139 (16), 126 (3), 112.5 (4), 97.5 (6), 86 (18), 84 (30), 83.5 (10), 70.5 (8), 63 (6), 51 (12), 49 (36), 39 (5) (256)
Sources: Synthesis (256)

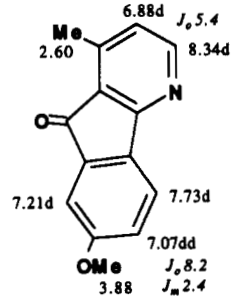


653. 7-HYDROXYONYCHINE

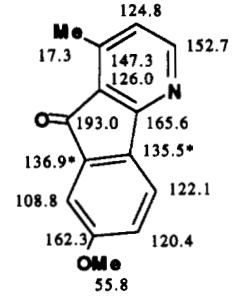


$C_{13}H_9O_2N$ 211.0633
Uv: 205 (3.97), 231sh (3.77), 265 (4.30), 284 (3.77), 295 (3.80), 316 (3.62), 330sh (3.53); [(HCl) 205, 221sh, 232sh, 256sh, 264, 296, 302sh, 354)] (256)
^{1}H nmr: (CD_3OD, 500 MHz) (256)
Ms: 211 (M^+, 100), 210 (3), 183 (3), 182 (7), 156 (1), 155 (4), 154 (12), 128 (2) 127 (6), 126 (1), 105 (3) (256)
Sources: Synthesis (256)

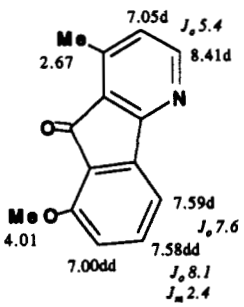
654. 7-METHOXYONYCHINE

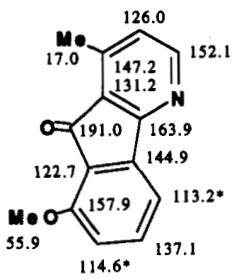


$C_{14}H_{11}O_2N$ 225.0789
Mp: 179 (256)
Uv: 207 (3.97), 265 (4.51), 283sh (3.84), 294 (3.84), 314 (3.67), 327 (3.51); [(HCl) 206, 218, 223, 264, 295, 300, 329, 348] (256)
Ir: (film) 1705, 1590, 1555, 1290 (256)
^{1}H nmr: (500 MHz) (256)
^{13}C nmr: (36)
Ms: 225 (M^+, 100), 210 (47), 183 (3), 182 (27), 154 (20), 153 (5), 128 (3), 127 (11), 126 (5), 112.5 (3), 101 (4) (256)
Sources: Synthesis (256)



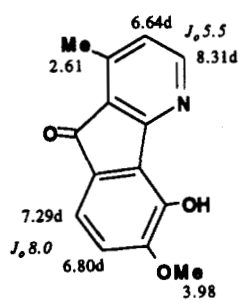
655. 8-METHOXYONYCHINE





$C_{14}H_{11}O_2N$ 225.0789
Mp: 193° (256)
Uv: 208 (4.17), 227 (4.24), 248 (4.34), 278sh (3.81), 290 (3.91), 301 (3.94), 340 (3.45); [(HCl) 208, 227, 247, 290sh, 302, 374sh] (256)
^{1}H nmr: (500 MHz) (256)
^{13}C nmr: (36)
Ms: 225 (M^+, 96), 224 (9), 207 (10), 198 (3), 197 (16), 196 (100), 195 (19), 194 (6), 182 (6), 179 (6), 178 (5), 169 (12), 168 (13), 167 (20), 166 (20), 154 (5), 153 (5), 152 (5), 141 (4), 140 (10), 139 (12), 128 (4), 127 (10), 113 (4), 112.5 (4) (256)
Sources: Synthesis (256)

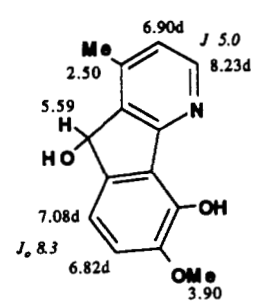
656. ISOURSULINE*
(5-Hydroxy-6-methoxyonychine)



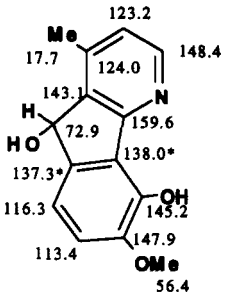
$C_{14}H_{11}O_3N$ 241.0738
Uv: 206 (4.08), 231 (4.00), 252 (4.27), 286sh (3.79), 294 (3.83), 307 (3.76), 371 (3.53) (158)
Ir: (film) 2910, 1700, 1620, 1600, 1570, 1505, 1475, 1430, 1380, 1295, 1260, 1232, 1170, 1130, 1070, 1050, 990, 925, 875, 830, 825, 790, 772 (158)
^{1}H nmr: ($CDCl_3$, 250 MHz) (158); also in C_5D_5N (158)
Ms: 241 (M^+, 100), 240 (87), 213 (14), 212 (97), 198 (63), 183 (26), 167 (6), 154 (11), 141 (22) (158)
Sources: Annonaceae: *Polyalthia stenopetala* (159), *Unonopsis spectabilis* (158) Synthesis (151)

*This structure has been erroneously attributed to oxylopine which is actually identical to ursuline (5-methoxy-6-hydroxyonychine **505**) (151).

657. POLYLONGINE
(Dihydroisoursuline)

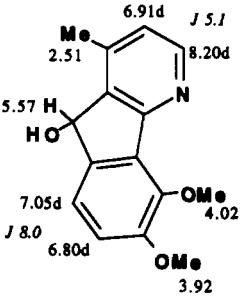


$C_{14}H_{13}O_3N$ 243.0895
Mp: 148–151° (282)
$[\alpha]_D$: −1.6° (c=0.1, $CHCl_3$) (282)
Uv: 222 (3.84), 230 (3.81), 236sh (3.79), 265 (3.36), 302 (3.65), 330sh (3.08) (282)
Ir: (Nujol) 3480 (282)
^{1}H nmr: (400 MHz) (282)
^{13}C nmr: (282)
Ms: 243 (M^+, 100), 226 (70), 214 (18), 172 (96) (282)
Sources: Annonaceae: *Polyalthia longifolia* (282)



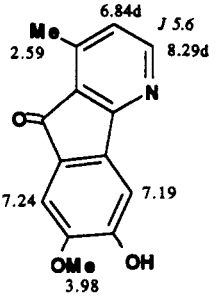
658. *O*-METHYLPOLYLONGINE
(5,6-Dimethoxydihydroonychine)

$C_{15}H_{15}O_3N$ 257.1051
^{1}H nmr: (400 MHz) (282)
Sources: Synthesis (282)



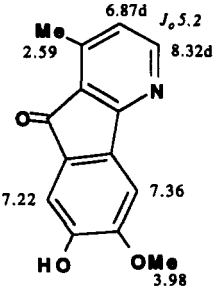
659. ONCODINE
(6-Hydroxy-7-methoxyonychine)

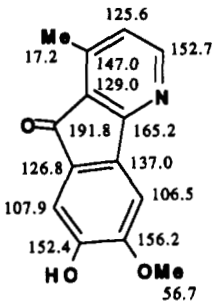
$C_{14}H_{11}O_3N$ 241.0738
Mp: 187–188° (26)
Uv: 210 (3.95), 240sh (3.96), 249 (4.00), 264sh (4.00), 282 (4.03), 300 (3.96), 330 (3.42), 350sh (3.28); [(HCl) 213, 226sh, 255, 316, 369] (26)
Ir: (KBr) 1710, 1560, 1265 (26)
^{1}H nmr: (250 MHz) (26); also in CD_3OD (26)
Ms: 241 (M^+, 76), 227 (14), 226 (100), 198 (28), 170 (17), 141 (13), 115 (19) (26)
Sources: Annonaceae: *Oncodostigma monosperma* (26)
Synthesis(26)



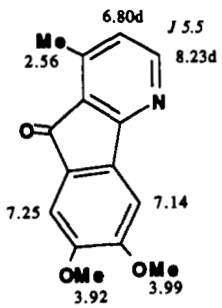
660. ISOONCODINE
(6-Methoxy-7-hydroxyonychine)

$C_{14}H_{11}O_3N$ 241.0738
Uv: 207 (3.57), 235sh (3.57), 270 (3.82), 278sh (3.81), 299 (3.64), 330 (3.13), 344sh (3.07); [HCl) 220, 257, 306sh, 317, 372] (26)
Ir: (Nujol) 3400, 2930, 1708, 1600, 1575 (285)
^{1}H nmr: ($CDCl_3$) (285); also in CD_3OD (26)
^{13}C nmr: (285)
Ms: 241 (M^+, 92), 227 (10), 226 (100), 198 (27), 170 (14), 142 (5), 115 (27) (26)
Sources: Annonaceae: *Polyalthia longifolia* (285)
Synthesis (26)

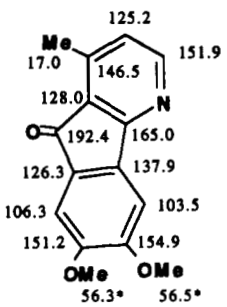




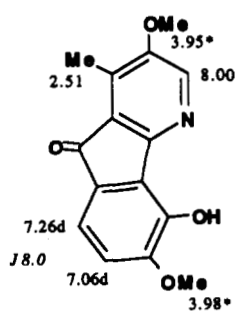
661. 6,7-DIMETHOXYONYCHINE
(*O*-Methyloncodine, Polyfothine)



$C_{15}H_{13}O_3N$ 255.0895
Mp: 188–190° (49)
Uv: 238sh (4.07), 248sh (4.12), 268 (4.34), 278sh (4.30), 298 (4.16), 329 (3.70), 342 (3.55); [(HCl) 248, 268, 278, 298, 329sh, 342, 370] (26)
Ir: (film) 1695, 1595, 1565, 1255, 1210 (26)
^{1}H nmr: (250 MHz) (26)
^{13}C nmr: (36)
Ms: 255 (100), 240 (21), 212 (43), 194 (7), 184 (12), 169 (20), 141 (17), 140 (14), 114 (9) (26)
Sources: Annonaceae: *Polyalthia longifolia* (49, 285)
Synthesis (26)

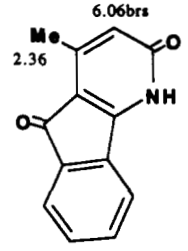


662. 2,6-DIMETHOXY-5-HYDROXYONYCHINE



$C_{15}H_{13}O_4N$ 271.0844
Mp: 211–212° (293)
Uv: 212 (3.28), 242 (3.35), 263 (3.30), 344 (2.98), 420 (2.38) (293)
Ir: (KBr) 3400, 2960, 2900, 2802, 1690, 1620, 1500, 1475, 1260, 1000, 780 (293)
^{1}H nmr: (DMSO-d_6) (293)
Ms: 271 (M^+, 80), 243 (16), 242 (100), 228 (42), 227 (39), 198 (36), 115 (31), 102 (27) (293)
Sources: Annonaceae: *Alphonsea mollis* (293)

663. 4-AZA-1-METHYL-3-OXO-3,4-DIHYDROFLUORENONE*



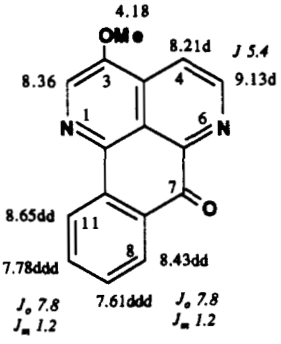
4 aromatic H at 7.47-7.55m (2H), 7.58dt (*J* 7.3 and 1.6), 7.86brd (*J* 7.3)

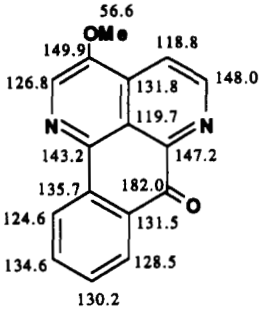
$C_{13}H_9O_2N$ 211.0633
Mp: 325° (31)
Uv: 231 (4.38), 249 (4.19), 291 (4.13), 301 (4.23), 334 (3.88), 349 (3.96), 425 (3.05) (31)
Ir: (KBr) 1705, 1675, 1665, 1610, 1580, 1565, 1465, 1375, 1195, 960, 900, 845, 750, 710, 680 (31)
^{1}H nmr: (DMSO-d_6, 400 MHz) (31)
Ms: 211 (M^+, 100), 183 (57), 182 (39), 154 (16), 128 (4), 127 (11) (31)
Sources: Synthesis (31)

*This structure has been erroneously given to dielsine **516** (31).

1-Azaoxoaporphinoids (Sampangine-type Alkaloids)

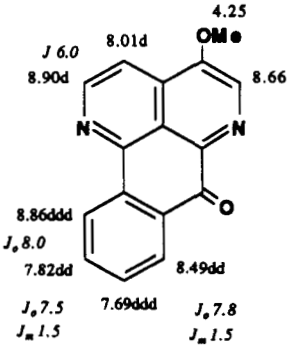
664. 3-METHOXYSAMPANGINE



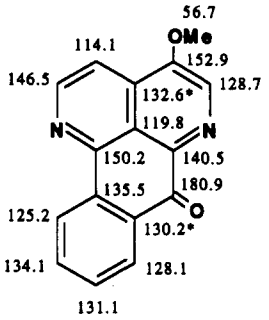


$C_{16}H_{10}O_2N_2$ 262.0742
Mp: 225–227° (219)
Uv: 219, 253, 309, 332, 429 (177)
Ir: (KBr) 1673, 1598, 1570, 1380, 1300, 1238, 1021, 954, 750, 720, 631 (177)
^{1}H nmr: (300 MHz) (177)
^{13}C nmr: (177)
Ms: 262 (M^+, 31), 247 (15), 220 (61), 219 (100), 191 (21), 165 (22), 164 (52), 137 (16) (177)
Sources: Annonaceae: *Cleistopholis patens* (177)
Synthesis (219)

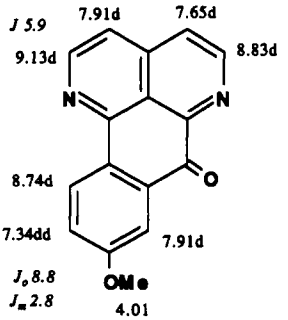
665. EUPOMATIDINE-2
(4-Methoxysampangine)



$C_{16}H_{10}O_2N_2$ 262.0742
Mp: 279–280° (dec) (219)
Uv: 213sh (3.91), 245 (4.02), 260sh (3.81), 266 (3.77), 331 (3.22), 368sh (3.48), 392 (3.66), 409 (3.65) (35)
Ir: ($CHCl_3$) 1669, 1598, 1573, 1496, 1411, 1380, 1324, 1292, 1280, 1028 (35)
^{1}H nmr: (400 MHz) (35)
^{13}C nmr: (35) (219)
Ms: 262 (M^+, 100), 247 (12), 219 (26), 191 (10), 164 (20) (35)
Sources: Eupomatiaceae: *Eupomatia laurina* (35)
Synthesis (146, 219)

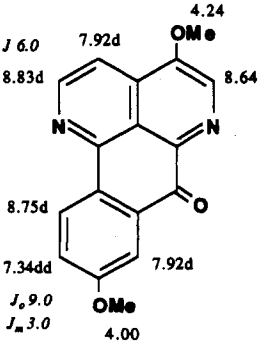


666. EUPOMATIDINE-1
(9-Methoxysampangine)



$C_{16}H_{10}O_2N_2$ 262.0742
Mp: 195–197° (35)
Uv: 216 (4.28), 221 (4.28), 231 (4.22), 260 (4.03), 286 (4.00), 319 (3.55), 350 (3.26), 437 (3.48) (35)
Ir: ($CHCl_3$) 3000, 2929, 1675, 1616, 1603, 1498, 1407, 1380, 1349, 1283, 1028, 847 (35)
^{1}H nmr: (400 MHz) (35)
^{13}C nmr: 55.9q, 110.9d, 118.2d, 119.2s, 122.5d, 123.5d, 127.5d, 128.8s, 134.1s, 138.8s, 147.4d, 148.3s, 148.5d, 151.5s, 162.5s, 181.9s (146)
Ms: 262 (M^+, 100), 232 (15), 204 (12), 191 (26), 164 (10) (35)
Sources: Eupomatiaceae: *Eupomatia bennettii* (35)
Synthesis (146)

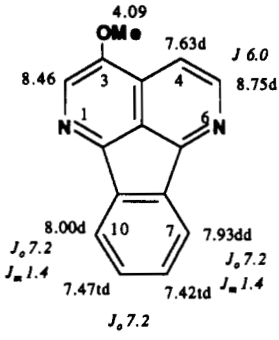
667. EUPOMATIDINE-3
(4,9-Dimethoxysampangine)



$C_{17}H_{12}O_3N_2$ 292.0847
Mp: 245–248° (dec) (35)
Uv: 220 (3.94), 230 (3.92), 248 (4.04), 269 (3.69), 285 (3.68), 324 (3.27), 337 (3.34), 391 (3.53), 414 (3.54) (35)
Ir: ($CHCl_3$) 1672, 1611, 1602, 1574, 1496, 1464, 1410, 1377, 1340, 1323, 1312, 1306, 1292, 1284, 1095, 1030, 993, 955, 919, 828 (35)
^{1}H nmr: (400 MHz) (35)
^{13}C nmr: ($CDCl_3/CF_3CO_2D$) 56.9q, 58.8q, 115.5d, 117.1d, 119.0s, 119.9s, 122.9d, 129.4d, 130.4d, 133.7s, 134.5s, 137.8d, 138.5s, 149.5s, 155.3s, 162.2s, 177.6s (146)
Ms: 292 (M^+, 100), 262 (27), 249 (24), 178 (10) (35)
Sources: Eupomatiaceae: *Eupomatia laurina* (35)
Synthesis (146)

Diazafluoranthenes (Eupolauridine-type Alkaloids)

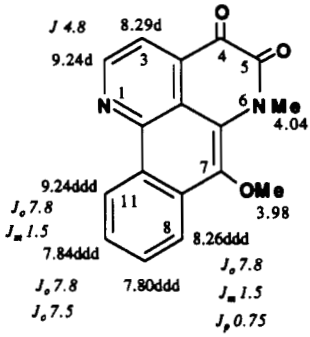
668. 3-METHOXYEUPOLAURIDINE

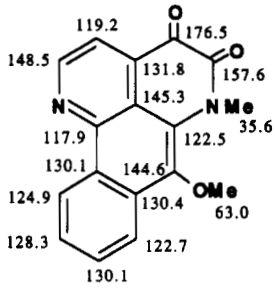


$C_{15}H_{10}ON_2$ 234.0793
Mp: 166–168° (35)
Uv: 216 (4.34), 226 (4.33), 237 (4.37), 285 (3.96), 298 (4.08), 306 (4.11), 320 (3.83), 341 (3.58), 358 (3.78), 376 (3.80) (35)
Ir: ($CHCl_3$) 2963, 1600, 1492, 1451, 1437, 1426, 1296, 1268, 1006 (35)
^{1}H nmr: (35)
Ms: 234 (M^+, 100), 219 (28), 191 (8), 164 (44), 137 (10), 82 (10) (35)
Sources: Eupomatiaceae: *Eupomatia laurina* (35)

4,5-Dioxo-1-azaaporphinoids (Imbiline-type Alkaloids)

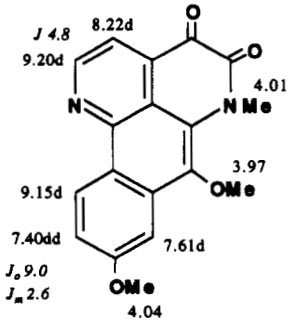
669. IMBILINE-1





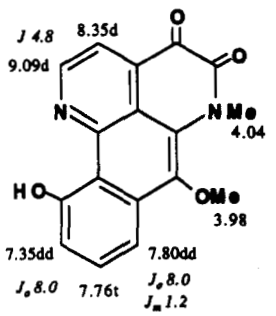
$C_{17}H_{12}O_3N_2$ 292.0847
Mp: 212–214° (35)
Uv: 218 (4.32), 244 (4.59), 290 (3.91), 304 (4.06), 315 (4.08), 459 (3.80) (35)
Ir: ($CHCl_3$) 2917, 2854, 1699, 1673, 1460, 1329, 1019 (35)
^{1}H nmr: (400 MHz) (35)
^{13}C nmr: (35)
Ms: 292 (M^+, 77), 249 (100), 166 (13) (35)
Sources: Eupomatiaceae: *Eupomatia bennettii* (35), *Eupomatia laurina* (35)

670. IMBILINE-3



$C_{18}H_{14}O_4N_2$ 322.0953
Mp: 240–244° (35)
Uv: 221 (4.16), 251 (4.56), 294 (3.98), 305 (4.04), 316 (4.17), 447 (3.76) (35)
Ir: ($CHCl_3$) 2928, 2854, 1699, 1673, 1614, 1587, 1486, 1457, 1439, 1431, 1374, 1349, 1328, 1299, 1284, 1263, 1098 (35)
^{1}H nmr: (400 MHz) (35)
Ms: 322 (M^+, 75), 279 (100), 236 (13), 139 (13), 69 (10) (35)
Sources: Eupomatiaceae: *Eupomatia bennettii* (35), *Eupomatia laurina* (35)

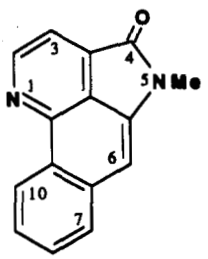
671. IMBILINE-2



$C_{17}H_{12}O_4N_2$ 308.0796
Mp: 267–270° (35)
Uv: 236 (4.48), 262 (3.56), 310 (3.91), 494 (3.93) (35)
Ir: ($CHCl_3$) 2927, 2856, 1702, 1699, 1695, 1676, 1530, 1466, 1411, 1350, 1280, 1097 (35)
^{1}H nmr: (400 MHz) (35)
Ms: 308 (M^+, 83), 265 (100), 154 (11), 126 (10) (35)
Sources: Eupomatiaceae: *Eupomatia bennettii* (35), *Eupomatia laurina* (35)

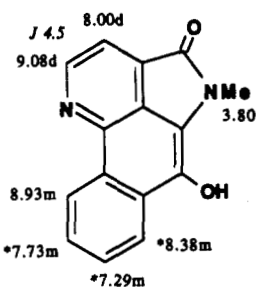
Azaphenanthrenes (Eupolauramine-type Alkaloids)

672. 6-DEMETHOXYEUPOLAURAMINE



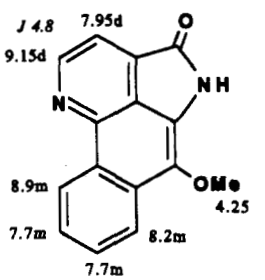
$C_{15}H_{10}ON_2$ 234.0793
Data not available
Sources: Synthesis (171)

673. 6-*O*-DEMETHYLEUPOLAURAMINE



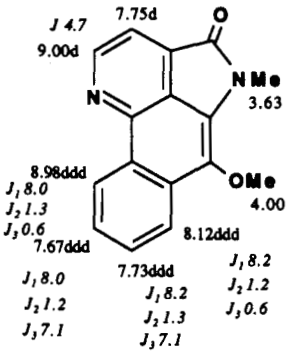
$C_{15}H_{10}O_2N_2$ 250.0742
Mp: 300–301° (172)
Ir: ($CHCl_3$) 3000, 2940, 1720, 1600, 1380, 1100 (172)
^{1}H nmr: (DMSO-d_6, 360 MHz) (172)
Ms: 250 (M^+, 11), 207 (8), 105 (4), 89 (19), 84 (71), 66 (100), 59 (36) (172)
Sources: Synthesis (98, 171, 172)

674. NOREUPOLAURAMINE
(*N*-Demethyleupolauramine)

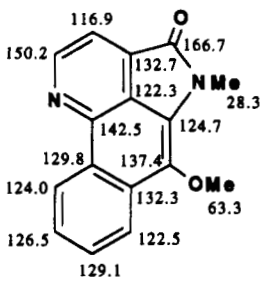


$C_{15}H_{10}O_2N_2$ 250.0742
Mp: 185–188° (138)
Uv: 218 (4.36), 237 (4.55), 282sh (4.33), 293 (4.33), 302 (4.32), 406 (3.79) (138)
Ir: (Nujol) 3170, 1700, 1641, 1620, 1602, 1280, 1225, 1197, 1150, 1100, 1052, 982, 860, 809, 775, 725, 706 (138)
^{1}H nmr: (DMSO-d_6 at 100° (138)
Ms: 250 (M^+, 68), 235 (100), 180 (16), 151 (15), 125 (16), 78 (10) (138)
Sources: Synthesis (138, 140, 142)

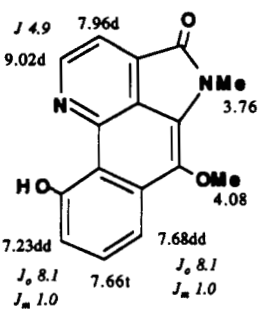
675. EUPOLAURAMINE



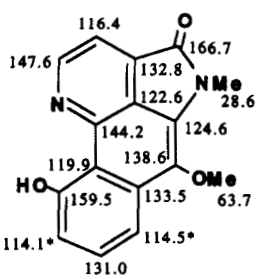
$C_{16}H_{12}O_2N_2$ 264.0899
Mp: 190–191° (138)
Uv: 230sh (4.67), 236 (4.69), 291 (4.42), 301 (4.39), 400 (3.81) (262)
Ir: ($CHCl_3$) 2950, 1703, 1650, 1600, 1220, 1100 (172)
^{1}H nmr: (400 MHz) (261)
^{13}C nmr: (261)
Ms: 264 (M^+, 64), 249 (100), 234 (6), 221 (6), 206 (2), 194 (3), 192 (2), 178 (3), 166 (12), 153 (2), 151 (3), 140 (2), 139 (3), 132 (2), 125 (3) (28)
X-Ray: (27)
Sources: Eupomatiaceae: *Eupomatia laurina* (28)
Synthesis (98, 138, 140, 142, 171, 172, 190, 205, 275)



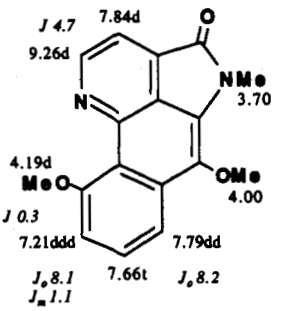
676. 10-HYDROXYEUPOLAURAMINE

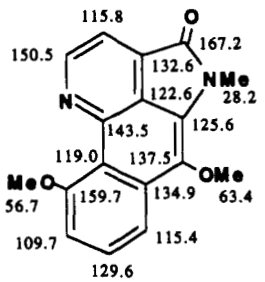


$C_{16}H_{12}O_3N_2$ 280.0847
^{1}H nmr: (261)
^{13}C nmr: (262)
Ms: 280 (M^+, 80), 265 (100), 251 (2), 237 (8), 210 (2), 209 (3), 194 (2), 182 (2), 181 (2), 166 (3), 154 (7), 153 (3), 140 (3), 127 (3), 126 (5), 113 (2), 104.5 (4), 28 (9) (28)
Sources: Eupomatiaceae: *Eupomatia laurina* (28)



677. 10-METHOXYEUPOLAURAMINE

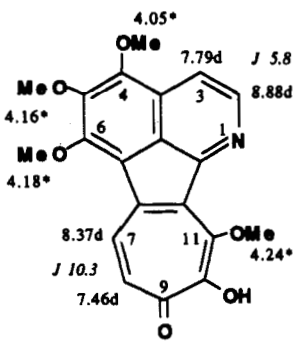


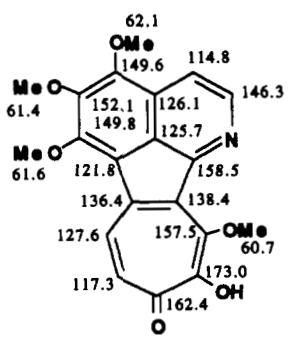


$C_{17}H_{14}O_3N_2$ 294.1004
Mp: 213–215° (28)
^{1}H nmr: (400 MHz) (261)
^{13}C nmr: (261)
Ms: 294 (M^+, 100), 293 (34), 279 (30), 278 (16), 265 (29), 251 (7), 250 (25), 249 (41), 236 (6), 222 (4), 221 (6), 208 (5), 206 (5), 179 (4), 178 (4), 167 (4), 166 (7), 165 (5), 164 (4), 153 (7), 28 (23) (28)
Sources: Synthesis (28, 261)

Tropoloisoquinolines (Imerubrine-type Alkaloids) and Azafluoranthenes (Rufescine-type Alkaloids)

678. PAREIRUBRINE*

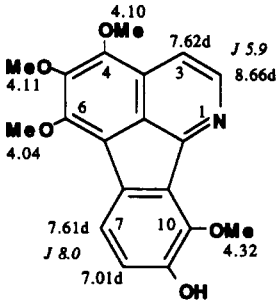


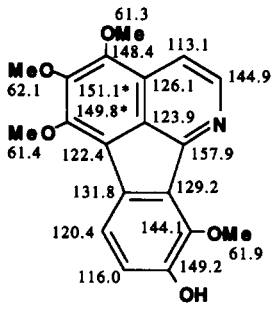


$C_{20}H_{17}O_6N$ 367.1055
Mp: 168–170° (202)
Uv: 274 (4.40), 294 (4.32), 364 (4.30), 420 (3.58), 472 (3.89) (202)
^{1}H nmr: (400 MHz) (202)
^{13}C nmr: (202)
X-ray: (202)
Sources: Menispermaceae: *Cissampelos pareira* (202)

*In crystalline state, pareirubrine only exists in the tautomer form.

679. NORIMELUTEINE
(9-*O*-Demethylimeluteine)

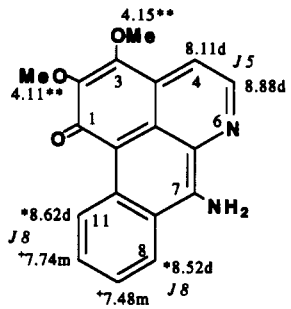




$C_{19}H_{17}O_5N$ 339.1105
Uv: 210 (4.40), 224sh (4.37), 240 (4.36), 256 (4.37), 292 (4.26) (201)
Ir: ($CHCl_3$) 3550, 3050, 1595, 1500, 1475, 1425, 1405, 1300, 1260 (201)
^{1}H nmr: (500 MHz) (201)
^{13}C nmr: (201)
Ms: 339 (M^+, 100), 321 (95), 83 (64) (201)
Sources: Menispermaceae: *Cissampelos pareira* (201)

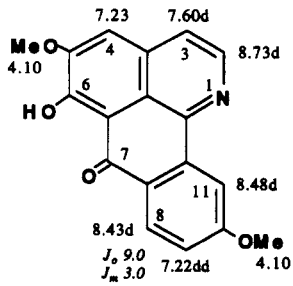
Miscellaneous

680. TELADIAZOLINE



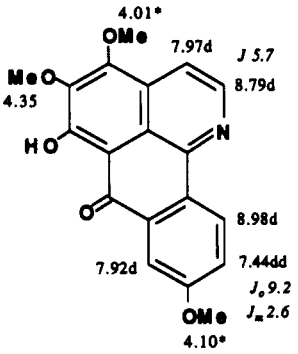
$C_{18}H_{14}O_3N_2$ 306.1004
Mp: 197–199° (dec) (196)
Uv: 254 (4.42), 294 (4.40), 325sh (3.69), 378 (3.01), 502 (3.91) (196)
^{1}H nmr: (200 MHz) (196)
Sources: Menispermaceae: *Telitoxicum glaziovii* (196)

681. 6-HYDROXY-5,10-DIMETHOXYOXOISOAPORPHINE



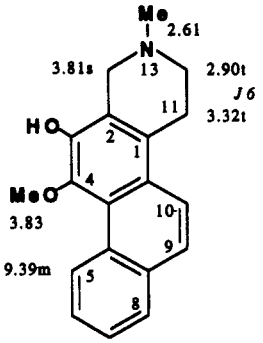
$C_{18}H_{13}O_4N$ 307.0844
Mp: 244–245° (153)
Uv: 219 (4.52), 252 (4.50), 310 (3.73), 346 (3.98), 380 (3.87), 402 (3.97), 422 (4.04) (153)
^{1}H nmr: (200 MHz) (153)
Ms: 307 (M^+, 100), 306 (31), 278 (39), 261 (26) (153)
Sources: Synthesis (153)

682. DAURIPORPHINOLINE



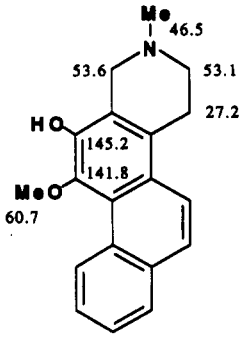
$C_{19}H_{15}O_5N$ 337.0949
Mp: 205–207° (306)
Uv: 219 (4.32), 235 (4.37), 256 (4.53), 315 (3.70), 355 (3.87), 423 (3.03), 445 (4.07) (257)
^{1}H nmr: (306)
Ms: 337 (M^+), 322, 307, 291 (306)
Sources: Menispermaceae: *Menispermum dauricum* (306)

683. ANNORETINE



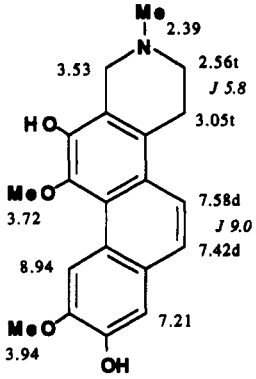
5 aromatic H at 7.57-7.90

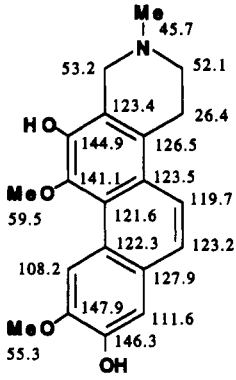
$C_{19}H_{19}O_2N$ 292.1415
Uv: 205 (4.08), 231 (3.99), 255 (4.35), 302 (4.08), 343 (3.52), 361 (3.46) (283)
Ir: (Nujol) 3350 (283)
^{1}H nmr: (200 MHz) (283)
^{13}C nmr: (283)
Ms: 293 (M^+, 86), 292 (28), 277 (19), 250 (100), 235 (39), 207 (31) (283)
Sources: Annonaceae: *Annona montana* (283)



6d at 123.0, 126.1, 127.4, 127.5, 128.1 and 129.4
6s at 124.3, 124.6, 126.8, 128.5, 130.1 and 133.6

684. LITEBAMINE





$C_{20}H_{21}O_4N$ 339.1469
Mp: 218–220° (287)
Uv: 263 (4.30), 279 (4.00), 305 (3.53), 318 (3.58), 345 (2.76) (287)
Ir: (KBr) 3444, 2924, 1620, 1587, 1539, 1460, 1403, 1253, 1113, 1014, 870, 770 (287)
^{1}H nmr: (DMSO-d_6, 300 MHz) (287)
^{13}C nmr: (287)
Ms: 339(M^+, 60), 296(100), 281(50)(287)
Sources: Lauraceae: *Litsea cubeba* (287)
Synthesis (164)

TABLE 5. Calculated Molecular Weights of New Aporphinoids.[a]

211.0633 $C_{13}H_9O_2N$
Onychine *N*-oxide **649**
5-Hydroxyonychine **651**
7-Hydroxyonychine **653**
4-Aza-1-methyl-3-oxo-3,4-dihydrofluorenone **663**

225.0789 $C_{14}H_{11}O_2N$
3-Methoxyonychine **650**
5-Methoxyonychine **652**
7-Methoxyonychine **654**
8-Methoxyonychine **655**

234.0793 $C_{15}H_{10}ON_2$
3-Methoxyeupolauridine **668**
6-Demethoxyeupolauramine **672**

239.0582 $C_{14}H_9O_3N$
5-Hydroxycleistopholine **641**
6-Hydroxycleistopholine **643**
8-Hydroxycleistopholine **644**

241.0738 $C_{14}H_{11}O_3N$
Isoursuline **656**
Oncodine **659**
Isooncodine **660**

243.0895 $C_{14}H_{13}O_3N$
Polylongine **657**

250.0742 $C_{15}H_{10}O_2N_2$
6-*O*-Demethyleupolauramine **673**
Noreupolauramine **674**

253.0738 $C_{15}H_{11}O_3N$
5-Methoxycleistopholine **642**
8-Methoxycleistopholine **645**

255.0531 $C_{14}H_9O_4N$
5,8-Dihydroxycleistopholine **646**

255.0895 $C_{15}H_{13}O_3N$
6,7-Dimethoxyonychine **661**

257.1051 $C_{15}H_{15}O_3N$
O-Methylpolylongine **658**

262.0742 $C_{16}H_{10}O_2N_2$
3-Methoxysampangine **664**

Eupomatidine-2 **665**
Eupomatidine-1 **666**

263.0582 $C_{16}H_9O_3N$
1-Demethoxy-4,5-dioxodehydroasimilobine **592**

264.0899 $C_{16}H_{12}O_2N_2$
Eupolauramine **675**

271.0844 $C_{15}H_{13}O_4N$
2,6-Dimethoxy-5-hydroxyonychine **662**

277.0738 $C_{17}H_{11}O_3N$
Oxoasimilobine **580**
N-Methylliriodendronine **581**
2-*O*-Methylliriodendronine **582**

280.0847 $C_{16}H_{12}O_3N_2$
10-Hydroxyeupolauramine **676**

283.0844 $C_{16}H_{13}O_4N$
5,8-Dimethoxycleistopholine **647**

283.1207 $C_{17}H_{17}O_3N$
1,2,11-Trihydroxyaporphine **548**

291.0531 $C_{17}H_9O_4N$
10-Hydroxyliriodenine **585**

291.0895 $C_{18}H_{13}O_3N$
O-*N*-Dimethyl-1-demethoxy-4,5-dioxodehydroasimilobine **593**

292.0847 $C_{17}H_{12}O_3N_2$
Eupomatidine-3 **667**
Imbiline-1 **669**

292.1415 $C_{19}H_{19}O_2N$
Annoretine **683**

293.1051 $C_{18}H_{15}O_3N$
8-Hydroxydehydroroemerine **613**
Dehydroxylopine **614**

294.1004 $C_{17}H_{14}O_3N_2$
10-Methoxyeupolauramine **677**

295.1207 $C_{18}H_{17}O_3N$
7-*O*-Methylnorushinsunine **599**

297.1364 $C_{18}H_{19}O_3N$
Nororientinine **545**

299.1157 $C_{17}H_{17}O_4N$
Geovanine **648**

305.1051 $C_{19}H_{15}O_3N$
7-Methyl-*N*-formyldehydroanonaine **621**

306.1004 $C_{18}H_{14}O_3N_2$
Teladiazoline **680**

306.1129 $C_{19}H_{16}O_3N$
N-Methyllysicamine **583**

307.0844 $C_{18}H_{13}O_4N$
Telikovine **584**
6-Hydroxy-5,10-dimethoxyoxoisoaporphine **681**

307.1207 $C_{19}H_{17}O_3N$
N-Demethyl-*N*-formyldehydronuciferine **612**

308.0796 $C_{17}H_{12}O_4N_2$
Imbiline-2 **671**

309.1364 $C_{19}H_{19}O_3N$
7-*O*-Methylushinsunine **600**
Stephenanthrine *N*-oxide **624**
8-Hydroxystephenanthrine **627**

311.1156 $C_{18}H_{17}O_4N$
6-Epilaurepukine **555**

311.1520 $C_{19}H_{21}O_3N$
Nuciferine *N*-oxide **544**
1,2,11-Trimethoxynoraporphine **549**
Argentinine *N*-oxide **623**

313.0949 $C_{17}H_{15}O_5N$
3,10,11-Trihydroxy-1,2-methylenedioxynoraporphine **574**

313.1313 $C_{18}H_{19}O_4N$
Norguattevaline **552**
Norisocorytuberine **565**

322.0953 $C_{18}H_{14}O_4N_2$
Imbiline-3 **670**

323.1156 $C_{19}H_{17}O_4N$
Dehydrocassythicine **617**
Dehydrobulbocapnine **618**

325.1313 $C_{19}H_{19}O_4N$
Isolaureline *N*-oxide **546**
O-Methyllaurepukine **551**
3-Methoxyputerine **555**
2,9-Dihydroxy-1,3-dimethoxy-6a,7-dehydroaporphine **615**
3,9-Dihydroxy,1,2-dimethoxy-6a,7-dehydroaporphine **616**
8-Hydroxystephenanthrine-*N*-oxide **628**

327.1469 $C_{19}H_{21}O_4N$
Stenantherine **553**
1,2-Dimethoxy-9,10-dihydroxyaporphine **557**
Artacinatine **620**

335.0793 $C_{19}H_{13}O_5N$
3-Methoxyoxoputerine **587**
Tuberosinone B **596**

336.1235 $C_{20}H_{18}O_4N$
1,2,11-Trimethoxy-*N*-methyloxoaporphine **586**

337.0949 $C_{19}H_{15}O_5N$
Annolatine **588**
Dauriporphinoline **682**

337.1313 $C_{20}H_{19}O_4N$
N-Acetylxylopine **547**
Sinomendine **579**

339.1105 $C_{19}H_{17}O_5N$
N-Formylcalycinine **562**
Oduocine **576**
3-Methoxyguattescidine **578**
Norimeluteine **679**

339.1469 $C_{20}H_{21}O_4N$
Isogoudotianine **622**
Isolaureline methine *N*-oxide **629**
3-*O*-Demethylthalicthuberine **630**
Litebamine **684**

339.1833 $C_{21}H_{25}O_3N$
Fissicesine **625**

341.1262 $C_{19}H_{19}O_5N$
N-Methylactinodaphnine *N*-oxide **559**
N-Methylhernangerine *N*-oxide **567**
N-Methylhernangerine β-*N*-oxide **568**
3-Methoxynordomesticine **572**
7-Hydroxydomesticine **601**

341.1626 $C_{20}H_{23}O_4N$
N-Methylstenantherine **554**
Norsecoglaucine **632**

341.5335 $C_{18}H_{12}O_4NCl$
7-Chloro-norcepharadione B **594**

342.1704 $C_{20}H_{24}O_4N$
Trilobinine **561**
Zizyphusine **564**
Fuzitine **566**

343.1418 $C_{19}H_{21}O_5N$
Boldine *N*-oxide **556**

349.0585 $C_{19}H_{11}O_6N$
Oxoduocine **589**
Stephadione **598**

351.1105 $C_{20}H_{17}O_5N$
Tuberosinone C **595**

353.1262 $C_{20}H_{19}O_5N$
N-Formylnornantenine **558**
N-Formyldiscoguattine **563**

353.1626 $C_{21}H_{23}O_4N$
Dicentrine methine **635**
O-Methylbulbocapnine methine **638**

354.1704 $C_{21}H_{24}O_4N$
O,N-Dimethylbulbocapnine **569**

355.1418 $C_{20}H_{21}O_5N$
Dicentrine *N*-oxide **560**
O-Methylbulbocapnine α-*N*-oxide **570**
O-Methylbulbocapnine β-*N*-oxide **571**
5-Oxonorglaucine **590**
7-Hydroxy-1,2,9,10-tetramethoxydehydronoraporphine **608**

355.1782 $C_{21}H_{25}O_4N$
Fissicesine *N*-oxide **626**

357.1575 $C_{20}H_{23}O_5N$
N-Methyldanguyelline **573**
Cis-7-Hydroxy-1,2,9,10-tetramethoxynoraporphine **602**
Trans-7-Hydroxy-1,2,9,10-tetramethoxynoraporphine **603**
4β-Hydroxythaliporphine **610**
Rhopalotine **611**

366.1704 $C_{22}H_{24}O_4N$
N-Methylthaliglucine **639**

367.1055 $C_{20}H_{17}O_6N$
Norpontevedrine **597**
Pareirubrine **678**

369.1575 $C_{21}H_{23}O_5N$
5-Oxoglaucine **591**
1,2,7,9,10-Pentamethoxydehydronoraporphine **609**
Dicentrine methine *N*-oxide **636**
Thalicthuberine *N*-oxide **634**

369.1940 $C_{22}H_{27}O_4N$
O-Methylisocorydine methine **637**

371.1731 $C_{21}H_{25}O_5N$
Acutifolidine **577**
Cis-7-Hydroxy-1,2,9,10-tetramethoxyaporphine **604**
Trans-7-Hydroxy-1,2,9,10-tetramethoxyaporphine **605**
Cis-1,2,7,9,10-Pentamethoxynoraporphine **606**

380.1497 $C_{22}H_{22}O_5N$
N-Methylthaliglucinone **640**

383.1731 $C_{22}H_{25}O_5N$
Dehydrothalicsimidine **619**
N-Acetyl-seco-*N*-methyllaurotetanine **631**

384.1809 $C_{22}H_{26}O_5N$
O-Methyl-*N*-dimethylhernandine **575**

385.1889 $C_{22}H_{27}O_5N$
Cis-1,2,7,9,10-Pentamethoxyaporphine **607**
Glaucine methine *N*-oxide **633**

429.1786 $C_{23}H_{27}O_7N$
Asimilobine-2-*O*-β-D-glucoside **543**

[a]Not previously reported in "Aporphinoid Alkaloids" Parts I, II, III, and IV (102–105).

TABLE 6. Botanical Sources of Aporphinoid Alkaloids.[a]

ANNONACEAE

Alphonsea
- 2,6-Dimethoxy-5-hydroxyonychine **662**
- Liriodenine **116**
- Oxostephanine **216**

Annona
- Annolatine **588**
- Annoretine **683**
- Anonaine **7**
- Anolobine **16**
- Argentinine **162**
- Asimilobine **3**
- Atherospermidine **119**
- Cleistopholine **495**
- Corydine **74**
- Geovanine **648**
- 3-Hydroxynornuciferine **254**
- Isoboldine **40**
- Lanuginosine **120**
- Laurelliptine **39**
- Liriodenine **116**
- Lysicamine **115**
- *N*-Methylasimilobine **4**
- *O*-Methylmoschatoline **118**
- Norushinsunine **138**
- Nuciferine **6**
- Oxophoebine **430**
- Xylopine **18**

Artabotrys
- Anonaine **7**
- Artacinatine **620**
- Asimilobine **3**
- Atherospermidine **119**
- 3-Hydroxynornuciferine **254**
- Laurelliptine **39**
- Liriodenine **116**
- Lysicamine **115**
- Nornuciferine **5**
- Norstephalagine **191**
- Ushinsunine **139**
- Wilsonirine **43**

Cananga
- Anonaine **7**
- Liriodenine **116**
- Ushinsunine **139**
- Ushinsunine β-*N*-oxide **441**

Cardiopetalum
- Anonaine **7**
- Asimilobine **3**
- Isoboldine **40**
- Liriodenine **116**
- Norushinsunine **138**

Cleistopholis
- Eupolauridine **392**
- Eupolauridine *N*-oxide **531**
- Isomoschatoline **332**
- Liriodenine **116**
- 3-Methoxysampangine **664**
- Onychine **498**

Cymbopetalum
- Liriodenine **116**

Desmos
- Isolaureline **19**
- Lanuginosine **120**
- Liriodenine **116**
- Lysicamine **115**
- *O*-Methylmoschatoline **118**
- Oxobuxifoline **339**
- Oxocrebanine **340**

Disepalum
- Anonaine **7**
- Asimilobine **3**
- Liriodenine **116**
- Norliridinine **253**

Enantia
- Atherospermidine **119**
- Liriodenine **116**
- Lysicamine **115**
- *O*-Methylmoschatoline **118**

Fissistigma
- Atherosperminine **163**
- Atherosperminine *N*-oxide **379**
- Calycinine **278**
- Fissicesine **625**
- Fissicesine *N*-oxide **626**
- Kuafumine **431**
- Liriodenine **116**
- *O*-Methylmoschatoline **118**
- Oxocrebanine **340**
- Xylopine **18**

Goniothalamus
- Liriodenine **116**
- Oxostephanine **216**

Greenwayodendron
- Oliverine **143**
- Uvariopsamine **167**

Guatteria
- Anonaine **7**
- Anolobine **16**
- Argentinine **162**
- Atherospermidine **119**
- Atherosperminine **163**
- Corytuberine **71**
- Dehydronantenine **156**
- Dehydroneolitsine **471**
- Elmerrillicine **198**
- 3-Hydroxynornuciferine **254**
- Isoboldine **40**
- Isocorydine **85**

Isodomesticine **53**
Isoguattouregidine **425**
Isopiline **184**
Laurotetanine **54**
Liriodenine **116**
3-Methoxyguattescidine **578**
3-Methoxyoxoputerine **587**
3-Methoxyputerine **555**
O-Methylisopiline **188**
N-Methyllaurotetanine **55**
O-Methylmoschatoline **118**
Neolitsine **69**
Norguattevaline **552**
Norisodomesticine **200**
Nornuciferine **5**
Oxoputerine **218**
Roemerine **8**
Roemeroline **17**

Monocyclanthus
Argentinine **162**
Argentinine *N*-oxide **623**
Asimilobine **3**
1-Demethoxy-4,5-dioxodehydroasimilobine **592**
4,5-Dioxodehydroasimilobine **348**
8-Hydroxystephenanthrine **627**
8-Hydroxystephenanthrine *N*-oxide **628**
N-Methylasimilobine **4**
Oxoasimilobine **580**
Stephenanthrine **483**
Stephenanthrine *N*-oxide **624**

Neostenanthera
Caaverine **1**
Isopiline **184**
Lirinidine **2**
N-Methylisopiline **185**
O-Methylisopiline **188**
O-Methylmoschatoline **118**
N-Methylstenantherine **554**
Norliridinine **253**
Stenantherine **553**

Oncodostigma
Anonaine **7**
Asimilobine **3**
Cleistopholine **495**
Corytuberine **71**
Liriodenine **116**
Lysicamine **115**
Norcepharadione A **434**
Nornuciferine **5**
Norushinsunine **138**
Oncodine **659**
Ursuline **505**

Oxandra
Liriodenine **116**

Oxymitra
Argentinine **162**
Atherosperminine **163**
Atherosperminine *N*-oxide **379**
Liriodenine **116**
Lysicamine **115**
N-Methylasimilobine **4**
Norcepharadione B **242**
Ushinsunine **139**

Phaeanthus
Argentinine **162**
Atherosperminine **163**

Polyalthia
Anonaine **7**
Asimilobine **3**
Darienine **510**
6,7-Dimethoxyonychine **661**
10-Hydroxyliriodenine **585**
Isooncodine **660**
Isoursuline **656**
Lanuginosine **120**
Liriodenine **116**
Oxolaureline **121**
O-Methylbulbocapnine α-*N*-oxide **570**
O-Methylbulbocapnine β-*N*-oxide **571**
N-Methylhernangerine β-*N*-oxide **568**
Norlirioferine **275**
Noroliveroline **356**
Oliveroline **222**
Oliveroline β-*N*-oxide **223**
Onychine **498**
Oxostephanine **216**
Polylongine **657**
3,10,11-Trihydroxy-1,2-methylenedioxynoraporphine **574**

Pseuduvaria
Atherospermidine **119**
Liriodenine **116**
Oxoanolobine **337**

Rollinia
Anonaine **7**
Asimilobine **3**
Lanuginosine **120**
Liriodenine **116**
Lysicamine **115**

Trivalvaria
Anonaine **7**
Boldine **50**
Laurolitsine **49**
Liriodenine **116**
Lysicamine **115**
Norcorydine **73**
Norisocorytuberine **565**
Nornuciferine **5**
Oxostephanine **216**

Unonopsis
6-Hydroxyonychine **500**
Isoursuline **656**
Liriodenine **116**
Lysicamine **115**

Macondine **508**
Onychine **498**
Ursuline **505**

Xylopia
Anolobine **16**
Calycinine **278**
Corytuberine **71**
Dehydroxylopine **614**
Isoboldine **40**
Lanuginosine **120**
Liriodenine **116**
Lysicamine **115**
Magnoflorine **72**
O-Methylmoschatoline **118**
Norglaucine **58**
Nornantenine **61**
Oxoglaucine **124**
Oxophoebine **430**
Xylopine **18**

ARISTOLOCHIACEAE

Aristolochia
N-Acetylnornuciferine **181**
4,5-Dioxodehydroasimilobine **348**
Isoboldine **40**
Lysicamine **115**
Magnoflorine **72**
Tuberosinone B **596**
Tuberosinone C **595**

BERBERIDACEAE

Berberis
1,2-Dimethoxy-9-hydroxyaporphine **400**
Isoboldine **40**
Magnoflorine **72**

Nandina
Magnoflorine **72**
Nantenine **62**

EUPHORBIACEAE

Croton
Taspine **385**

EUPOMATIACEAE

Eupomatia
Eupolauramine **675**
Eupolauridine **392**
Eupomatidine-1 **666**
Eupomatidine-2 **665**
Eupomatidine-3 **667**
10-Hydroxyeupolauramine **676**
Imbiline-1 **669**
Imbiline-2 **671**
Imbiline-3 **670**
Liriodenine **116**
3-Methoxyeupolauridine **668**

FUMARIACEAE

Ceratocapnos
Glaucine **59**
Isoboldine **40**
Norglaucine **58**
Thaliporphine **44**

Corydalis
Bulbocapnine **92**
Corytuberine **71**
Domesticine **48**
Isoboldine **40**
Isocorydine **85**
Magnoflorine **72**
N-Methyllaurotetanine **55**
Norisocorydine **84**
Predicentrine **52**
Rhopalotine **611**

Dactylicapnos
Corydine **74**
Glaucine **59**
Isocorydine **85**

Fumaria
Lastourvilline **407**

Platycapnos
Corunnine **134**
Dehydroglaucine **154**
Dehydronantenine **156**
Domesticine **48**
Glaucine **59**
Glaucine methine **487**
Isodomesticine **53**
N-Methyllaurotetanine **55**
Nandazurine **137**
Nantenine **62**
Oxoglaucine **124**
Oxonantenine **125**
Pontevedrine **135**
Predicentrine **52**
Thalicthuberine **169**
Thalicthuberine *N*-oxide **634**
Thaliporphine **44**

Sarcocapnos
Corunnine **134**
Dehydroglaucine **154**
Glaucine **59**
Glaucine methine **487**
Isoboldine **40**
Isocorydine **85**
N-Methyllaurotetanine **55**
Oxoglaucine **124**
Pontevedrine **135**

HERNANDIACEAE

Hernandia
Hernandine **111**
Ocoteine **109**

Illigera
Actinodaphnine **64**
Hernovine **76**

Launobine **91**
Litseferine **203**

HYPECOACEAE

Hypecoum
Bulbocapnine **92**

LAURACEAE

Actinodaphne
Actinodaphnine **64**
Laurotetanine **54**
N-Methyllaurotetanine **55**

Aniba
Apoglaziovine **21**
Isoboldine **40**
Norisocorydine **84**

Cryptocarya
Atheroline **123**

Dehaasia
Atheroline **123**
Boldine **50**
Corytuberine **71**
Isocorydine **85**
Laurolitsine **49**
Nantenine **62**
Norisocorydine **84**
Xanthoplanine **56**

Lindera
Corydine **74**
Dicentrine **67**
Hernagine **286**
Hernandine **111**
Hernovine **76**
Isocorydine **85**
Laurolitsine **49**
N-Methylhernangerine **90**
N-Methyllaurotetanine **55**
Nandigerine **89**
Norisocorydine **84**
Oduocine **576**
Ovigerine **94**
Oxoduocine **589**

Litsea
Actinodaphnine **64**
Boldine **50**
Corytuberine **71**
Dicentrine **67**
Isoboldine **40**
Isocorydine **85**
Isodomesticine **53**
Laurolitsine **49**
Laurotetanine **54**
Liriotulipiferine **199**
Litebamine **684**
Magnoflorine **72**
N-Methyllaurotetanine **55**
N-Methyllindcarpine **79**
Nordicentrine **204**
Norisocorydine **84**

Nectandra
Apoglaziovine **21**
Boldine **50**
Isoboldine **40**
Laurolitsine **49**
Laurotetanine **54**
3-Methoxynordomesticine **572**
Norphoebine **420**
Phoebine **421**

Neolitsea
Actinodaphnine **64**
Boldine **50**
Corytuberine **71**
Isoboldine **40**
Laurolitsine **49**
Laurotetanine **54**
N-Methyllaurotetanine **55**
Nornuciferine **5**

Ocotea
3-*O*-Demethylthalicthuberine **630**
O,O-Dimethylcorytuberine **88**
3-Hydroxynuciferine **187**
Isoboldine **40**
Isocorydine **85**
Laurelliptine **39**
3-Methoxynuciferine **189**
Nordomesticine **47**
Nororientinine **545**
Pulchine **193**
Thalicthuberine **169**
Zenkerine **192**

Phoebe
Asimilobine **3**
Laurotetanine **54**
Oxoglaucine **124**
Oxopurpureine **129**

MAGNOLIACEAE

Aromadendron
N-Acetylanonaine **183**
N-Acetylnornuciferine **181**
N-Acetyl-seco-*N*-methyllaurotetanine **631**
Liriodenine **116**
Oxoglaucine **124**
Pontevedrine **135**
Predicentrine **52**

Liriodendron
Apoglaziovine **21**
Caaverine **1**
Corunnine **134**
Glaucine **59**
Lirinidine **2**
Liriodendronine **215**
Liriotulipiferine **199**
N-Methyllaurotetanine **55**
Nornuciferine **5**
Nuciferine **6**

Predicentrine **52**
Roemerine **8**
Thaliporphine **44**
Tuliferoline **190**

Magnolia
Magnoflorine **72**

Michelia
Liriodenine **116**

Paramichelia
Liriodenine **116**

Talauma
Anolobine **16**
Anonaine **7**
Asimilobine **3**
Liriodenine **116**
Norushinsunine **138**
Xylopine **18**

MENISPERMACEAE

Anisocycla
Liriodenine **116**
Roemrefidine **9**
Stephenanthrine **483**

Cissampelos
Bulbocapnine **92**
Corydine **74**
Corytuberine **71**
Magnoflorine **72**
Norimeluteine **679**
Norrufescine **388**
Nuciferine **6**
Pareirubrine **678**

Cocculus
Magnoflorine **72**

Cyclea
Dicentrine **67**
N-Formylnornantenine **558**
Laurotetanine **54**
Nornantenine **61**

Menispermum
Dauriporphinoline **682**

Sinomenium
Dauriporphine **529**
N-Demethyl-*N*-formyldehydronuciferine **612**
Sinomendine **579**

Stephania
Anonaine **7**
Argentinine **162**
Asimilobine **3**
Asimilobine-2-*O*-β-D-glucoside **543**
Cassameridine **127**
Corydine **74**
Corydione **353**
Corytuberine **71**
Crebanine **38**
Dehydrocrebanine **372**
Dehydrodicentrine **157**
Dehydroroemerine **151**
Dehydrostephanine **369**
Dicentrine **67**
Dicentrinone **126**
Epiglaufidine **455**
8-Hydroxydehydroroemerine **613**
Isoboldine **40**
Isocorydine **85**
Isolaureline **19**
Liriodenine **116**
Magnoflorine **72**
N-Methylactinodaphnine **65**
Nantenine **62**
Nordicentrine **204**
Oliveroline **222**
Oxoanolobine **337**
Oxocrebanine **340**
Oxonantenine **125**
Oxoputerine **218**
Oxostephanine **216**
Phanostenine **66**
Roemerine **8**
Roemeroline **17**
Stephadione **598**
Stephanine **12**
Stephenanthrine **483**
Stesakine **272**
Xylopine **18**

Strychnopsis
Isocorydine **85**
Liriotulipiferine **199**
N-Methyllindcarpine **79**
Predicentrine **52**

Telitoxicum
Lysicamine **115**
O-Methylmoschatoline **118**
Teladiazoline **680**
Telazoline **382**
Telikovine **584**

Tiliacora
Magnoflorine **72**

Tinospora
N-Acetylnornuciferine **181**
N-Formylanonaine **251**
N-Formylnornuciferine **396**
Magnoflorine **72**

MONIMIACEAE[b]

Peumus
Laurolitsine **49**

Siparuna
Anonaine **7**
Asimilobine **3**
Isocorydine **85**
Laurotetanine **54**
Liriodenine **116**
N-Methyllaurotetanine **55**

Nantenine **62**
Nornantenine **61**
Noroliveroline **356**
Oxonantenine **125**

NELUMBONACEAE

Nelumbo
Asimilobine **3**
Lirinidine **2**
Nuciferine **6**

PAPAVERACEAE

Eschscholtzia
N-Methyllaurotetanine **55**

Glaucium
Cataline **148**
Corunnine **134**
Corydine **74**
Dehydroglaucine **154**
Dihydropontevedrine **354**
Glaucine **59**
Isoboldine **40**
Isocorydine **85**
Magnoflorine **72**
Oxoglaucine **124**
Tetradehydroglaucine **469**
Thaliporphine **44**

Papaver
Bracteoline **42**
Corydine **74**
Corytuberine **71**
Isoboldine **40**
Isocorydine **85**
Isothebaine **31**
Magnoflorine **72**
N-Methylisothebaine **403**
Rhopalotine **611**
Roemerine **8**
Roemeroline **17**
Roemrefidine **9**

Stylophorum
Corytuberine **71**
Isoboldine **40**
Magnoflorine **72**

PIPERACEAE

Piper
Aristolodione **433**
Cepharadione A **177**
Cepharadione B **176**
4,5-Dioxodehydroasimilobine **348**
Norcepharadione B **242**

RANUNCULACEAE

Aconitum
Corydine **74**
Fuzitine **566**

Asteropyrum
Magnoflorine **72**

Isopyrum
Magnoflorine **72**

Ranunculus
Magnoflorine **72**

Thalictrum
Acutifolidine **577**
Dehydroglaucine **154**
Dehydrothalicsimidine **619**
Glaucine **59**
Isoboldine **40**
Isocorydine **85**
Leucoxylonine **212**
Liriodenine **116**
Magnoflorine **72**
N-Methyldanguyelline **573**
N-Methylthaliglucine **639**
N-Methylthaliglucinone **640**
Noroconovine **207**
Oconovine **102**
Ocoteine **109**
Oxopurpureine **129**
Thalicsimidine **100**
Thalicthuberine **169**
Thaliglucine **171**
Thaliglucinone **172**
Thaliporphine **44**
Trilobinine **561**

Xanthorhiza
Liriodenine **116**

RHAMNACEAE

Discaria
1,2,11-Trimethoxynoraporphine **549**

Ziziphus
Caaverine **1**
Lysicamine **115**
N-Methylasimilobine **4**
Norisocorydine **84**
Nornuciferine **5**
Nuciferine **6**
Zizyphusine **564**

RUTACEAE

Fagara
Fagara base **46**

Zanthoxylum
Magnoflorine **72**

SAURURACEAE

Houttuynia
Cepharadione B **176**
7-Chloro-norcepharadione B **594**
Norcepharadione B **242**

[a]Excluding those previously tabulated in "Aporphinoid Alkaloids" Parts I, II, III, and IV (102–105).
[b]Including Atherospermataceae and Siparunaceae.

TABLE 7. Names and Synonyms of Aporphinoids Cited in this Review.[a]

N-Acetylanonaine **183** *ns, sd*
N-Acetylnornuciferine **181** *ns, sd*
N-Acetyl-seco-*N*-methyllaurotetanine **631** *na*
N-Acetylxylopine **547** *na*
Actinodaphnine **64** *ns*
Acutifolidine **577** *na*
Alkaloid PO-3 **136** *ns*
Annolatine **588** *na*
Annoretine **683** *na*
Anolobine **16** *ns*
Anonaine **7** *ns*
Apoglaziovine **21** *ns*
Argentinine **162** *ns*
Argentinine-*N*-oxide **623** *na*
Aristolodione **433** *ns, sd*
Artacinatine **620** *na*
Asimilobine **3** *ns*
Asimilobine-2-*O*-β-D-glucoside **543** *na*
Atheroline **123** *ns*
Atherospermidine **119** *ns*
Atherosperminine **163** *ns*
Atherosperminine *N*-oxide **379** *ns*
4-Aza-1-methyl-3-oxo-3,4-dihydrofluorenone **663** *na*
Bianfugenine **529** *ns, sd*
Bisnoratherosperminine **378** *ns, sd*
Boldine **50** *ns*
Boldine *N*-oxide **556** *na*
Bracteoline **42** *ns*
Bulbocapnine **92** *ns*
Caaverine **1** *ns*
Calycinine **278** *ns*
Canangine **392** *ns*
Cassameridine **127** *ns*
Cassythicine **65** *ns*
Cataline **148** *ns*
Cepharadione A **177** *ns, sd*
Cepharadione B **176** *ns, sd*
7-Chloro-6-demethyl-cepharadione B **594** *na*
7-Chloro-norcepharadione B **594** *na*
Cleistopholine **495** *ns*
Corunnine **134** *ns*
Corydine **74** *ns, sd*
Corydione **353** *ns*
Corytuberine **71** *ns, sd*
Crabbine **611** *na*
Crebanine **38** *ns*
Danguyelline **294** *rs, sd*
Darienine **510** *ns*
Dauriporphine **529** *ns, sd*
Dauriporphinoline **682** *na*
Dehydroanonaine **459** *ns, sd*
Dehydrobulbocapnine **618** *na*
Dehydrocassythicine **617** *na*
Dehydrocrebanine **372** *ns*
Dehydrodicentrine **157** *ns*
Dehydroglaucine **154** *ns*
6a,7-Dehydro-2-hydroxy-4,5-dioxonoraporphine **592** *na*
6a,7-Dehydro-2-methoxy-4,5-dioxoaporphine **593** *na*
Dehydronantenine **156** *ns*
Dehydroneolitsine **471** *ns*
Dehydronorglaucine **468** *ns*
Dehydronornantenine **470** *ns*
Dehydronornuciferine **457** *ns, sd*
Dehydroroemerine **151** *ns*
Dehydrostephanine **369** *ns*
Dehydrothalicsimidine **619** *na*
Dehydroxylopine **614** *na*
1-Demethoxycepharadione B **593** *na*
1-Demethoxy-4,5-dioxodehydroasimilobine **592** *na*
6-Demethoxyeupolauramine **672** *na*
6-*O*-Demethyleupolauramine **673** *na*
N-Demethyleupolauramine **674** *na*
N-Demethyl-*N*-formyldehydronuciferine **612** *na*
9-*O*-Demethylimeluteine **679** *na*
6-*O*-Demethylmenisporphine **383** *ns, sd*
9-*O*-Demethylrufescine **388** *sd*
3-*O*-Demethylthalicthuberine **630** *na*
Dicentrine **67** *ns*
Dicentrine methine **635** *na*
Dicentrine methine *N*-oxide **636** *na*
Dicentrine *N*-oxide **560** *na*
Dicentrinone **126** *ns*
Didehydroglaucine **469** *ns*
Dielsine **516** *rs*
Dihydroisoursuline **657** *na*
Dihydroonychine **499** *ns, sd*
Dihydropontevedrine **354** *ns, sd*
5,8-Dihydroxycleistopholine **646** *na*
2,9-Dihydroxy-1,3-dimethoxy-6a,7-dehydroaporphine **615** *na*
3,9-Dihydroxy-1,2-dimethoxy-6a,7-dehydroaporphine **616** *na*
3,9-Dihydroxynornuciferine **552** *na*
5,8-Dimethoxycleistopholine **647** *na*
5,6-Dimethoxydihydroonychine **658** *na*
1,2-Dimethoxy-9,10-dihydroxyaporphine **557** *na*
1,2-Dimethoxy-9-hydroxyaporphine **400** *ns, sd*
2,6-Dimethoxy-5-hydroxyonychine **662** *na*
6,7-Dimethoxyonychine **661** *na*
4,9-Dimethoxysampangine **667** *na*
O,N-Dimethylbulbocapnine **569** *na*
O,N-Dimethylbulbocapninium cation **569** *na*
O,N-Dimethylcalycinine **411** *ns, sd*
O,O-Dimethylcorytuberine **88** *ns*
O,N-Dimethyl-1-demethoxy-4,5-dioxodehydroasimilobine **593** *na*
O,N-Dimethylfissoldine **411** *ns, sd*
O,N-Dimethylliriodendronine **214** *ns*
4,5-Dioxodehydroasimilobine **348** *ns, sd*
4,5-Dioxodehydronantenine **353** *ns*

Discoguattine **280** *ns*
Domesticine **48** *ns*
Duguenaine **380** *ns*
Duguespixine **474** *rs*
Elmerrillicine **198** *ns*
Epiglaufidine **455** *ns*
(−)-6-Epilaurepukine **550** *na*
Eupolauramine **675** *na*
Eupolauridine **392** *ns*
Eupolaauridine di-*N*-oxide **532** *ns, sd*
Eupolauridine *N*-oxide **531** *ns, sd*
Eupomatidine-1 **666** *na*
Eupomatidine-2 **665** *na*
Eupomatidine-3 **667** *na*
Fagara base **46** *ns*
Fissicesine **625** *na*
Fissicesine *N*-oxide **626** *na*
Fissistigine A **278** *ns*
Fissoldine **278** *ns*
N-Formylanonaine **251** *ns, sd*
N-Formylcalycinine **562** *na*
N-Formyldehydronornuciferine **612** *na*
N-Formyldiscoguattine **563** *na*
N-Formylnornantenine **558** *na*
N-Formylnornuciferine **396** *ns, sd*
Fuzitine **566** *na*
Geovanine **648** *na*
Glaucine **59** *ns*
Glaucine methine **487** *ns, sd*
Glaucine methine *N*-oxide **633** *na*
Glaucine *N*-oxide **276** *ns, sd*
Goudotianine **479** *rs, sd*
Hernagine **286** *ns, sd*
Hernandine **111** *ns, sd*
Hernangerine **89** *ns, sd*
Hernovine **76** *ns, sd*
Hexahydronandazurine **601** *na*
Homomoschatoline **118** *ns*
5-Hydroxycleistopholine **641** *na*
6-Hydroxycleistopholine **643** *na*
8-Hydroxycleistopholine **644** *na*
7-Hydroxydehydronorglaucine **608** *na*
8-Hydroxydehydroroemerine **613** *na*
1-Hydroxy-2,9-dimethoxynoraporphine **545** *na*
6-Hydroxy-5,9-dimethoxyoxoisoaporphine **383** *ns, sd*
6-Hydroxy-5,10-dimethoxyoxoisoaporphine **681** *na*
7-Hydroxydomesticine **601** *na*
10-Hydroxyeupolauramine **676** *na*
cis-7-Hydroxyglaucine **604** *na*
trans-7-Hydroxyglaucine **605** *na*
4β-Hydroxyisocorydine **611** *na*
10-Hydroxyliriodenine **585** *na*
5-Hydroxy-6-methoxyonychine **656** *na*
6-Hydroxy-7-methoxyonychine **659** *na*
cis-7-Hydroxynorglaucine **602** *na*
trans-7-Hydroxynorglaucine **603** *na*
3-Hydroxynornuciferine **254** *ns*
3-Hydroxynuciferine **187** *ns*
5-Hydroxyonychine **651** *na*
6-Hydroxyonychine **500** *ns, sd*
7-Hydroxyonychine **653** *na*
8-Hydroxyonychine **503** *ns*
8-Hydroxystephenanthrine **627** *na*
8-Hydroxystephenanthrine-*N*-oxide **628** *na*
cis-7-Hydroxy-1,2,9,10-tetramethoxyaporphine **604** *na*
trans-7-Hydroxy-1,2,9,10-tetramethoxyaporphine **605** *na*
7-Hydroxy-1,2,9,10-tetramethoxydehydronoraporphine **608** *na*
cis-7-Hydroxy-1,2,9,10-tetramethoxynoraporphine **602** *na*
trans-7-Hydroxy-1,2,9,10-tetramethoxynoraporphine **603** *na*
4β-Hydroxythaliporphine **610** *na*
Imbiline-1 **669** *na*
Imbiline-2 **671** *na*
Imbiline-3 **670** *na*
Imeluteine **391** *ns*
Isoboldine **40** *ns*
Isocorydine **85** *ns*
Isocorydine *N*-oxide **288** *ns*
Isodomesticine **53** *ns*
Isogoudotianine **622** *na*
Isoguattouregidine **425** *ns, sd*
Isolaureline **19** *ns*
Isolaureline methine **165** *ns*
Isolaureline methine *N*-oxide **629** *na*
Isolaureline *N*-oxide **546** *na*
Isomoschatoline **332** *ns*
Isooncodine **660** *na*
Isopiline **184** *ns, sd*
Isothebaine **31** *ns*
Isoursuline **656** *na*
Kuafumine **431** *ns*
Lanuginosine **120** *ns, sd*
Lastourvilline **407** *ns*
Launobine **91** *ns*
Laurelliptine **39** *ns*
Laurolitsine **49** *ns, sd*
Laurotetanine **54** *ns, sd*
Lauterine **121** *ns*
Leucoxylonine **212** *ns*
Lirinidine **2** *ns, sd*
Liriodendronine **215** *ns, sd*
Liriodenine **116** *ns, sd*
Liriotulipiferine **199** *ns*
Litebamine **684** *na*
Litseferine **203** *ns*
Lysicamine **115** *ns*
Macondine **508** *ns, sd*
Magnoflorine **72** *ns*
5-Methoxycleistopholine **642** *na*
8-Methoxycleistopholine **645** *na*
7-Methoxydehydronorglaucine **609** *na*
10-Methoxyeupolauramine **677** *na*
3-Methoxyeupolauridine **668** *na*
3-Methoxyglaucine **100** *ns*
cis-7-Methoxyglaucine **607** *na*
3-Methoxyguattescidine **578** *na*

6-Methoxy-7-hydroxyonychine **660** *na*
10-Methoxyliriodenine **121** *ns*
3-Methoxynordomesticine **572** *na*
cis-7-Methoxynorglaucine **606** *na*
3-Methoxynuciferine **189** *ns*
3-Methoxyonychine **650** *na*
5-Methoxyonychine **652** *na*
6-Methoxyonychine **502** *ns, sd*
7-Methoxyonychine **654** *na*
8-Methoxyonychine **655** *na*
3-Methoxyoxoputerine **587** *na*
3-Methoxyputerine **555** *na*
3-Methoxysampangine **664** *na*
4-Methoxysampangine **665** *na*
9-Methoxysampangine **666** *na*
N-Methylactinodaphnine **65** *ns*
N-Methylactinodaphnine *N*-oxide **559** *na*
N-Methylanolobine **17** *ns*
N-Methylasimilobine **4** *ns*
O-Methylasimilobine **4** *ns*
O-Methylatheroline **124** *ns*
1-Methyl-4-azafluoren-9-one **498** *ns*
O-Methylbulbocapnine α-*N*-oxide **570** *na*
O-Methylbulbocapnine β-*N*-oxide **571** *na*
O-Methylbulbocapnine methine **638** *na*
N-Methylcalycinine **279** *ns, sd*
O-Methylcalycinine **280** *ns*
N-Methyldanguyelline **573** *na*
O-Methyl-*N*-dimethylhernandine **575** *na*
O-Methyl-*N*-dimethylhernandinium cation **575** *na*
N-Methyldiscoguattine **411** *ns, sd*
O-Methylduguespixine **477** *rs*
O-Methylelmerrillicine **555** *na*
N-Methylfissoldine **279** *ns*
7-Methyl-*N*-formyldehydroanonaine **621** *na*
N-Methylhernangerine **90** *ns*
N-Methylhernangerine *N*-oxide **567** *na*
N-Methylhernangerine β-*N*-oxide **568** *na*
O-Methylisoboldine **44** *ns*
O-Methylisocorydine methine **637** *na*
N-Methylisopiline **185** *ns, sd*
O-Methylisopiline **188** *ns, sd*
N-Methylisothebaine **403** *ns*
N-Methylisothebainium cation **403** *ns*
N-Methyllaunobine **92** *ns*
O-Methyllaurepukine **551** *na*
N-Methyllaurotetanine **55** *ns*
N-Methyllindcarpine **79** *ns*
O-Methyllirinine **189** *ns*
N-Methylliriodendronine **581** *na*
2-*O*-Methylliriodendronine **582** *na*
N-Methyllysicamine **583** *na*
7-*O*-Methylmichelalbine **599** *na*
O-Methylmoschatoline **118** *ns, sd*
N-Methylnandigerine **90** *ns*
N-Methylnandigerine *N*-oxide **567** *na*
N-Methylnandigerine β-*N*-oxide **568** *na*
O-Methylnorlirinine **188** *ns, sd*
7-*O*-Methylnorushinsunine **599** *na*
O-Methyloncodine **661** *na*
O-Methylpolylongine **658** *na*
O-Methylpraecoxine **88** *ns*
O-Methylpukateine *N*-oxide **551** *na*
N-Methylroemerine **9** *ns*
N-Methylsecoglaucine **487** *ns, sd*
N-Methylstenantherine **554** *na*
N-Methylthaliglucine **639** *na*
N-Methylthaliglucinium cation **639** *na*
N-Methylthaliglucinone **640** *na*
N-Methylthaliglucinonium cation **640** *na*
N-Methylthaliporphine **46** *ns*
7-*O*-Methylushinsunine **600** *na*
O-Methylxyloguyelline **420** *ns*
N-Methylxylopine methine **165** *ns*
N-Methylxylopine methine *N*-oxide **629** *na*
N-Methylxylopine *N*-oxide **546** *na*
N-Methylzenkerine **193** *ns*
Nandazurine **137** *ns*
Nandigerine **89** *ns, sd*
Nantenine **62** *ns, sd*
Neolitsine **69** *ns*
Noraristolodione **348** *ns, sd*
Noratherosperminine **239** *ns*
Norboldine **49** *ns, sd*
Norbulbocapnine **91** *ns*
Norcepharadione A **434** *ns*
Norcepharadione B **242** *ns, sd*
Norcorydine **73** *ns*
Nordicentrine **204** *ns, sd*
Nordomesticine **47** *ns*
Noreupolauramine **674** *na*
Norglaucine **58** *ns*
Norguattevaline **552** *na*
Norimeluteine **679** *na*
Norisoboldine **39** *ns*
Norisocorydine **84** *ns*
Norisocorytuberine **565** *na*
Norisodomesticine **200** *ns*
Norliridinine **253** *ns, sd*
Norlirioferine **275** *ns, sd*
Nornantenine **61** *ns*
Nornuciferine **5** *ns*
Noroconovine **207** *ns*
Noroliveroline **356** *ns*
Nororientidine **464** *ns, sd*
Nororientinine **545** *na*
Norphoebine **420** *ns*
Norpontevedrine **597** *na*
Norrufescine **388** *ns, sd*
Norsecoglaucine **632** *na*
Norstephalagine **191** *ns*
Norushinsunine **138** *ns*
Nuciferine **6** *ns*
Nuciferine *N*-oxide **544** *na*
Oconovine **102** *ns*
Ocoteine **109** *ns*
Oduocine **576** *na*
Oliverine **143** *ns*
Oliveroline **222** *ns*
Oliveroline β-*N*-oxide **223** *ns, sd*
Oncodine **659** *na*

Onychine **498** *ns, sd*
Onychine *N*-oxide **649** *na*
Orientine **401** *ns*
Ovigerine **94** *ns, sd*
Oxoanolobine **337** *ns*
Oxoasimilobine **580** *na*
Oxobuxifoline **339** *ns*
Oxocrebanine **340** *ns*
7-Oxodehydroasimilobine **580** *na*
Oxoduocine **589** *na*
5-Oxoglaucine **591** *na*
Oxoglaucine **124** *ns*
Oxolaureline **121** *ns*
Oxo-*O*-methylpukateine **218** *ns*
Oxonantenine **125** *ns*
5-Oxonorglaucine **590** *na*
Oxonuciferine **115** *ns*
Oxophoebine **430** *ns, sd*
Oxopurpureine **129** *ns, sd*
Oxoputerine **218** *ns*
Oxostephanine **216** *ns, sd*
Oxoxylopine **120** *ns*
Oxylopine **504** *rs*
Oxylopinine **500** *ns*
Pareirubrine **678** *na*
cis-1,2,7,9,10-Pentamethoxyaporphine **607 na**
1,2,7,9,10-Pentamethoxydehydronoraporphine **609** *na*
cis-1,2,7,9,10-Pentamethoxynoraporphine **606** *na*
Peruvianine **335** *ns*
Phanostenine **66** *ns*
Phoebine **421** *ns*
Piperadione **433** *ns, sd*
Polyfothine **661** *na*
Polylongine **657** *na*
Pontevedrine **135** *ns*
Predicentrine **52** *ns*
Pulchine **193** *ns*
Purpureine **100** *ns*
Remrefidine **9** *ns*
Rhopalotine **611** *na*
Roemerine **8** *ns*
Roemerine methine **483** *ns, sd*
Roemeroline **17** *ns*
Roemrefidine **9** *ns*
Sampangine **533** *ns, sd*
Secoboldine **490** *ns, sd*
Secoglaucine **241** *ns*
Sinomendine **579** *na*
Stenantherine **553** *na*
Stephadione **598** *na*
Stephanine **12** *ns*
Stephenanthrine **483** *ns, sd*
Stephenanthrine *N*-oxide **624** *na*
Stesakine **272** *ns*
Taspine **385** *ns*
Teladiazoline **680** *na*
Telazoline **382** *ns*
Telikovine **584** *na*
Telitoxine **387** *ns*
Tetradehydroglaucine **469** *ns*
Thalicmidine **44** *ns*
Thalicmine **109** *ns*
Thalicsimidine **100** *ns*
Thalicthuberine **169** *ns, sd*
Thalicthuberine *N*-oxide **634** *na*
Thaliglucine **171** *ns*
Thaliglucinone **172** *ns*
Thaliporphine **44** *ns*
Thalphenine methine **171** *ns*
Thaspine **385** *ns*
Tinocrispicine **396** *ns, sd*
Trichoguattine **478** *rs*
1,2,11-Trihydroxyaporphine **548** *na*
3,10,11-Trihydroxy-1,2-methylenedioxynoraporphine **574** *na*
Trilobinine **561** *na*
1,2,11-Trimethoxydehydronoraporphine **464** *ns, sd*
1,2,11-Trimethoxy-*N*-methyloxoaporphine **586** *na*
1,2,11-Trimethoxy-*N*-methyloxoaporphinium cation **586** *na*
1,2,11-Trimethoxynoraporphine **549** *na*
1,2,11-Trimethoxyoxoaporphine **426** *ns*
1,2,11-Trimethoxyoxoaporphine methiodide **586** *na*
Tuberosinone B **596** *na*
Tuberosinone C **595** *na*
Tuliferoline **190** *ns*
Ursuline **505** *ns, sd*
Ushinsunine **139** *ns*
Ushinsunine β-*N*-oxide **441** *ns, sd*
Uvariopsamine **167** *ns*
Uvariopsine **165** *ns*
Wilsonirine **43** *ns*
Xanthoplanine **56** *ns, sd*
Xylopine **18** *ns*
Zenkerine **192** *ns*
Zizyphusine **564** *na*

[a]*rs*: revised structure; *sd*: additional physical and spectral data; *ns*: new source (known aporphinoid isolated again or synthesized); *na*: new aporphinoid alkaloid.

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