

^1H NMR DATA OF MONOTERPENOID INDOLE ALKALOIDSMauri Lounasmaa^{*} and Arto TolvanenTechnical University of Helsinki, Department of Chemistry,
Laboratory for Organic and Bioorganic Chemistry, SF-02150 Espoo, Finland

Abstract - ^1H NMR data of 163 monoterpene indole alkaloids are presented in diagram form.

INTRODUCTION

Progress in nuclear magnetic resonance has been enormous during the past 15 years.¹ Modern instruments equipped with superconducting magnets and improved data processing systems allow structures of complex natural products to be completely solved. Along with ^{13}C NMR, high resolution ^1H NMR with its ability to distinguish all the individual protons of the unknown molecule has become a highly valued tool.

A few summaries of the ^1H NMR data of indole alkaloids have already been published. The reviews compiled by Crabb² cover the whole alkaloid field (including ^{13}C NMR), but rely on selected examples only. The earlier catalogues of indole alkaloids by Hesse³ and Gabetta and Mustich⁴ and some textbooks, e.g. the one by Cordell⁵, contain fragmentary ^1H NMR information. The present review is intended to serve as a reference collection of indole alkaloid ^1H NMR data and assist in elucidating the structures of new alkaloids. The ^1H NMR characteristics of the main structural classes are presented in an easy-to-use form.

GENERAL REMARKS

The literature is covered from 1979 to mid-1985, with the inclusion of some earlier studies. Only completely or nearly completely assigned spectra are reviewed. Rearranged monoterpene indole alkaloids (e.g. *Cinchona*) are not included, and for the sake of manageability the review is limited to naturally occurring compounds and some of their simple derivatives (e.g. acetates).

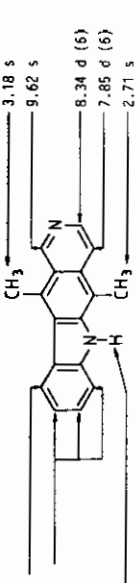
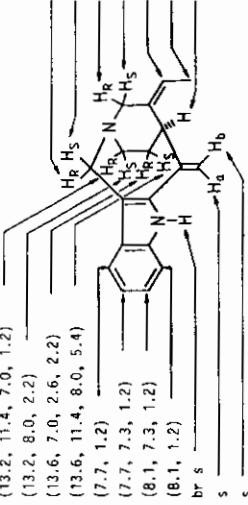
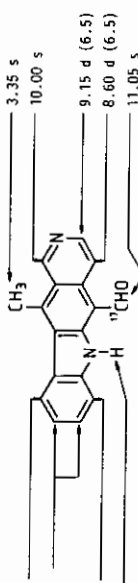
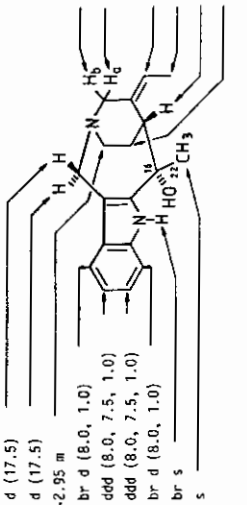
The alkaloids are arranged in order of increasing molecular weight (monomers followed by bis-indole alkaloids). Each entry is provided with the alkaloid name (the one used in the original paper), molecular formula, spectrometer frequency, solvent and an abbreviated reference. Complete references, as well as the alphabetical list of alkaloids, are presented at the end of this review.

The structural formulae are drawn as in the original reports except in some cases where it was necessary to modify the original drawing slightly. For clarity, numbering of carbon atoms in the formulae has been omitted except for numbers that appear in the name of the alkaloid.

Chemical shifts are given as δ -values in ppm downfield from internal TMS (unless otherwise noted); CDCl_3 is preferred as solvent. Coupling constants are given in Hz and appear in parentheses in order of magnitude.

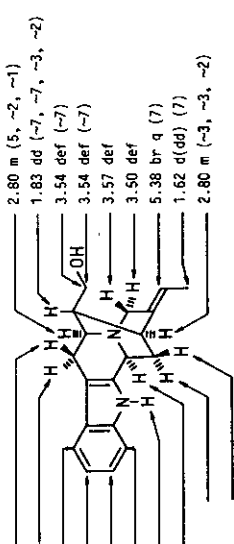
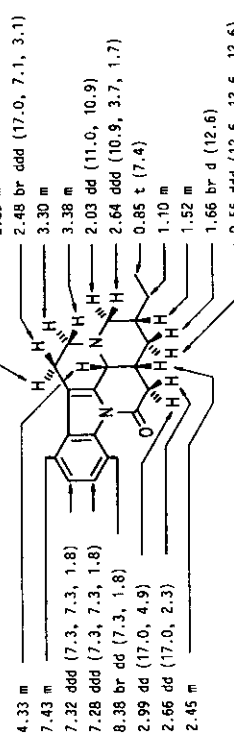
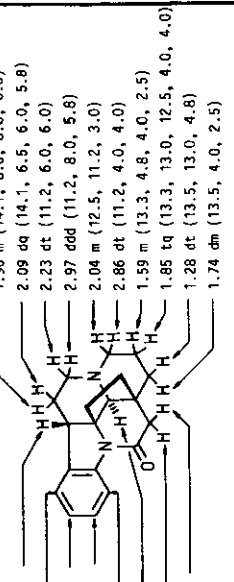
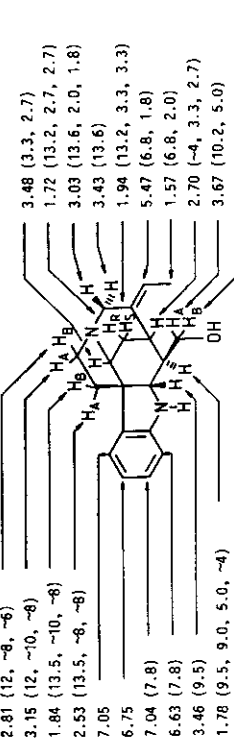
The common α/β -notation of protons is indicated normally. Notations a/b, A/B, R/S, axial/equatorial (ax/eq) and exo/endo (ex/en) are used as in the original paper. Other abbreviations used throughout this work are s (singlet), d (doublet), t (triplet), q (quartet), quint (quintet), sept (septet), m (multiplet), br (broad), na (narrow) and def (deformed). Superscripts a, b, c etc. denote interchangeable assignments.

Additional data and remarks are gathered in notes. We apologize in advance for any omissions and errors that, despite careful proof-reading, may appear in the text. We hope that this collection will prove useful for chemists investigating alkaloids.

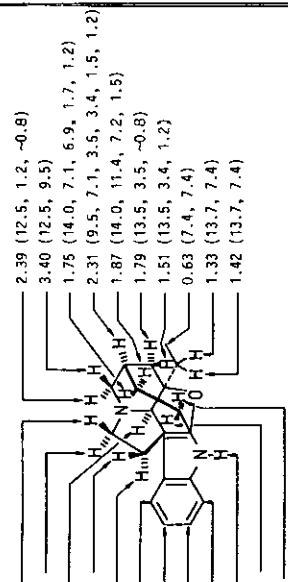
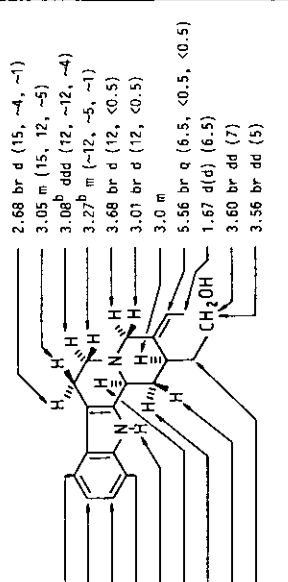
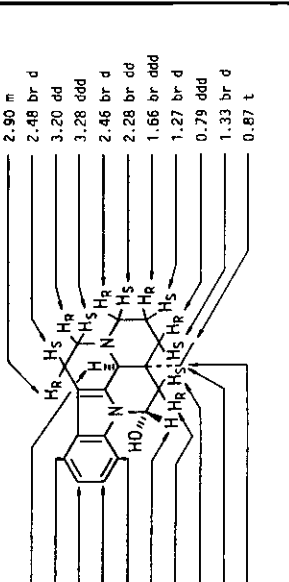
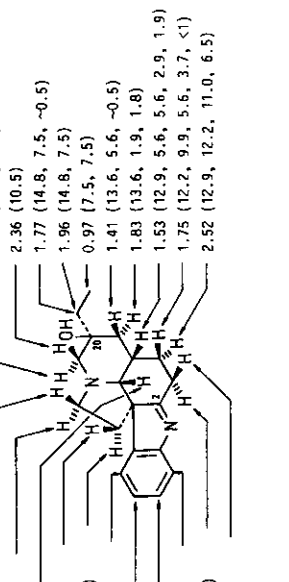
NAME: Ellipticine FREQUENCY: 270 MHz SOLVENT: $(CD_3)_2SO$ REFERENCE: (6) S. Michel et al., <i>Tetrahedron Lett.</i>, 1980, <u>21</u>, 4027. NOTES:	MW: 246 MF: $C_{17}H_{14}N_2$ NO: 1  8.31 d (8) 7.14-7.52 m 11.31 s 3.18 s 9.62 s 8.34 d (6) 7.85 d (6) 2.71 s
NAME: Apparicine FREQUENCY: 300 MHz SOLVENT: $CDCl_3$ REFERENCE: (7) T.A. van Beek et al., <i>Planta Med.</i>, 1985, 277. NOTES: For earlier data in $(CD_3)_2CO$, see Ref. 78.	MW: 264 MF: $C_{18}H_{20}N_2$ NO: 3  3.06 (13.2, 11.4, 7.0, 1.2) 3.40 (13.2, 8.0, 2.2) 1.88 (13.6, 7.0, 2.6, 2.2) 2.15 (13.6, 11.4, 8.0, 5.4) 7.42 (7.7, 1.2) 7.05 (7.7, 7.3, 1.2) 7.17 (8.1, 7.3, 1.2) 7.28 (8.1, 1.2) 7.88 br s 5.38 s 5.25 s 4.26 (17.7) 4.49 (17.7) 3.80 (16.0, 2.3) 3.18 (16.0, 1.2) 5.23 (7.0) 1.45 (7.0, 2.3) 3.91 (5.4, 2.6)
NAME: 17-Oxoellipticine FREQUENCY: 270 MHz SOLVENT: $(CD_3)_2SO$ REFERENCE: (6) S. Michel et al., <i>Tetrahedron Lett.</i>, 1980, <u>21</u>, 4027. NOTES:	MW: 260 MF: $C_{17}H_{12}N_2O$ NO: 2  8.40 d (8) 7.30-7.60 m 7.85 d (8) 12.80 s 3.35 s 10.00 s 9.15 d (6.5) 8.60 d (6.5) 11.05 s
NAME: 16S-Hydroxy-16,22-dihydroapparicine FREQUENCY: 300 MHz SOLVENT: $CDCl_3$ REFERENCE: (8) P. Perera et al., <i>J. Nat. Prod.</i>, 1984, <u>47</u>, 835. NOTES:	MW: 282 MF: $C_{18}H_{22}N_2O$ NO: 4  4.73 d (17.5) 3.95 d (17.5) 2.89-2.95 m 7.46 br d (8.0, 1.0) 7.18 ddd (8.0, 7.5, 1.0) 7.08 ddd (8.0, 7.5, 1.0) 7.33 br d (8.0, 1.0) 9.10 br s 1.73 s 3.58 br d (17.0, 2.5) 3.56 br d (17.0, 1) 5.69 q (6.9) 1.75 ddd (6.9, 2.5, 1) 3.32 dd (12.0, 3.5) 2.01-2.22 m

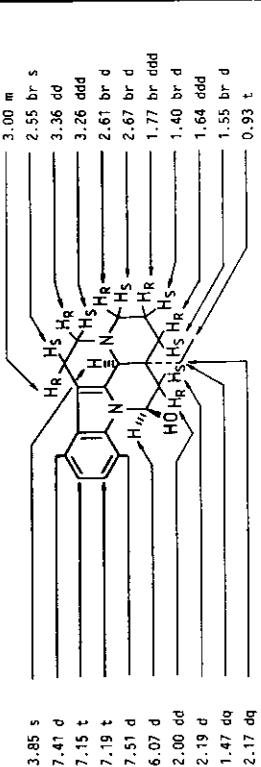
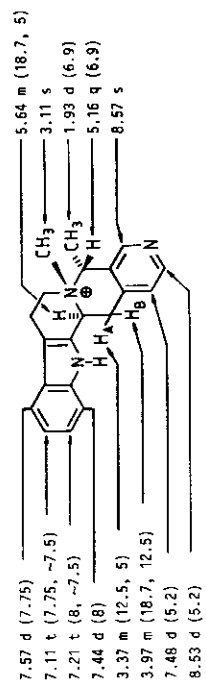
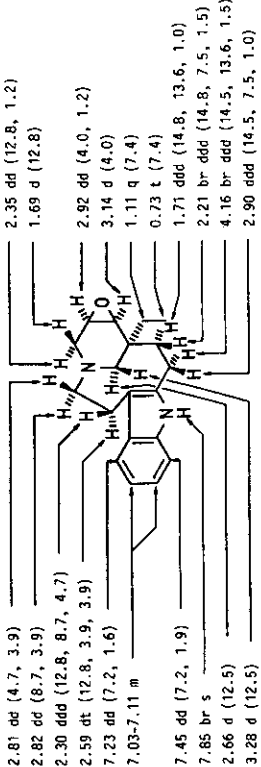
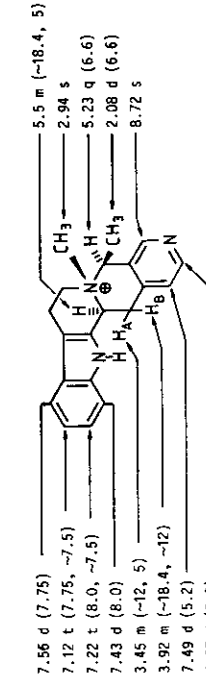
NAME: Peduncularine FREQUENCY: 360 MHz REFERENCE: (9) H.-P. Ros et al., <u>Helv. Chim. Acta</u>, 1979, 62, 481. NOTES:	NAME: Sorelline FREQUENCY: 200 MHz REFERENCE: (11) R. Kyburz et al., <u>Helv. Chim. Acta</u>, 1979, 62, 2539. NOTES:	NAME: Melinonine-E FREQUENCY: 200/400 MHz REFERENCE: (12) R.P. Borris et al., <u>Helv. Chim. Acta</u>, 1984, 67, 455.	NAME: Raufloorine FREQUENCY: 400 MHz REFERENCE: (10) M. Lounasmaa et al., <u>Heterocycles</u>, 1985, 23, 1503. NOTES:	NAME: 292 MF: $C_{20}H_{24}N_2$ NO: 5 1.32 d & 1.17 d (6) 3.02 sept 2.97 m (14, 11) 2.69 m (14, 3) 7.60 d (~7) 7.18^a t (~7) 7.11^a t (~7) 7.31 d (~8) 8.24 br s 6.93 s 3.85 d (6) 4.94 s 4.81 s 5.94 m 5.67 br d (~8) 2.44 dm (18) 2.04 dm (18) 2.49 br s 2.90 m (11, 3)	NAME: 292 MF: $C_{20}H_{24}N_2$ NO: 7 1.27 s 2.81 dd[d] (14.5, 7.5, <1.5]) 2.73 dd[d] (14.5, 5.5, <1.5]) 7.62 d[dd] (7.7, [1.5, <1]) 7.08 dd[d] (7.7, 7.3, [1.5]) 7.15 dd[d] (7.7, 7.3, [1.5]) 7.28 d[dd] (7.7, [1.5, <1]) 8.23 br s 6.97 [dd (<1.5)] 3.48 dd (7.5, 5.5, 2.5) 1-2 br s 2.38 d[t] (2.7, [2.5]) 1.76 ddd (13.2, 3.5, 2.5) 2.04 d[t] (13.2, [2.7]) 4.74 [dd (2.5, ~1)] 5.07 d (2.5) 6.34 d (9.5) 5.93 dd[d] (9.5, 6, (~1)) 2.01 [ddd (6, 3.5, 2.7)] 1.00 s	NAME: 293 MF: $C_{19}H_{21}N_2O$ NO: 8 8.38 m 7.46 m 7.79 m 3.97 dd (19.9, 7.3) 3.50 br d (dd) (19.9, 1.9) 2.71 br s (ddm) (3.6) 2.25 dm (14.2) 8.40 d (6.5) 8.51 d (6.5) 5.10 br s (ddm) (14.2, 2.0, 1.0) 2.43 dddd (14.2, 3.6, 2.0, 1.9) 2.19 dddd (16.0, 15.0, 4.9, 2.6) 1.92 dddd (16.0, 5.5, 2.5, 1.0) 1.64 dddd (14.5, 4.9, 2.5) 1.21 dddd (15.0, 14.5, 5.5, 5.0) 2.03 dddd (7.5, 7.5, 5.0) 3.75 dd (11.5, 7.5) 3.83 dd (11.5, 7.5)	NAME: 292 MF: $C_{19}H_{20}N_2O$ NO: 6 1.69 dd (12, 5) 2.47 d(d) (12, ~1) 7.22 6.85 7.10 6.77 3.37 s(d) (<0.5) 3.59 d(dd) (10, ~1, <0.5) 1.88 dd(d) (14, 10, ~1) 2.58 dd (7, 5) 3.22 dd(d) (7, 5, ~1) 3.50 def. 3.50 def. 5.31 br q (7) 1.64 br d (7) 3.17 dd(d) (5, 5, ~1) 1.42 dd(d) (14, 5, ~1)
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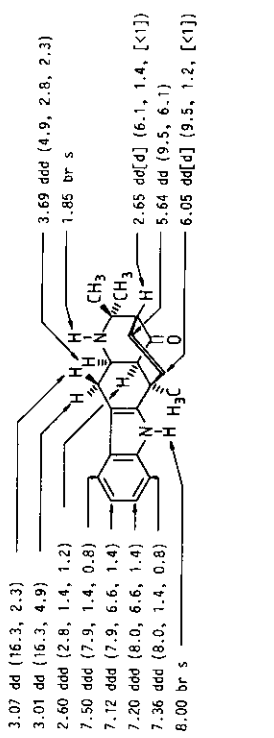
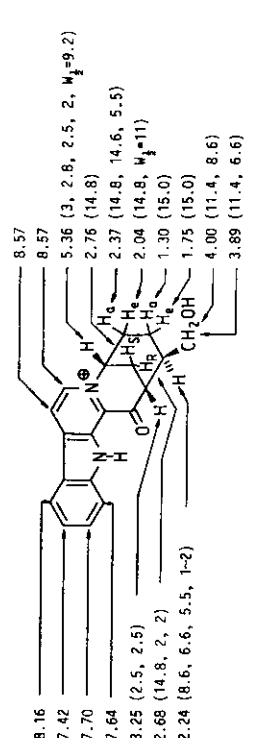
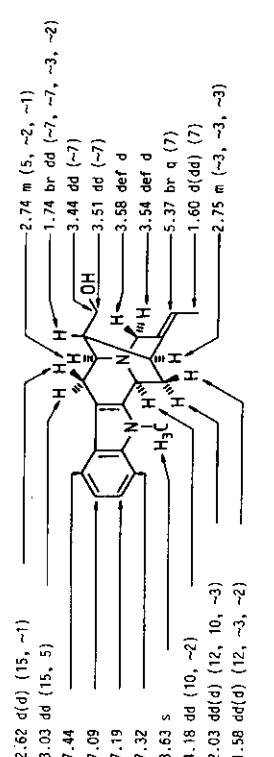
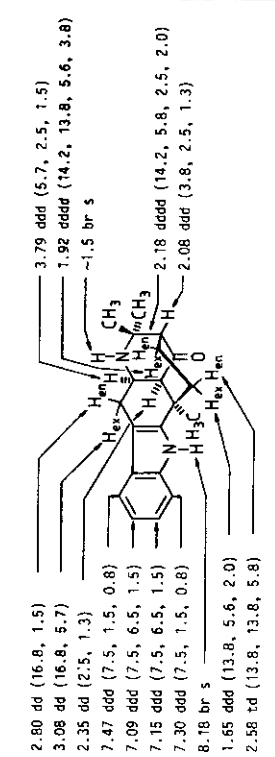
NAME: Aristoserrateline FREQUENCY: - SOLVENT: - REFERENCE: (13) M. A. Haf et al., <i>Tetrahedron</i>, 1984, 40, 4359. NOTES:	MW: 294 MF: $C_{19}H_{22}N_2O$ NO: 9 1.0-1.6 br 3.83 ddd (6.6, 5.0, 0.9) 1.87 dd (14.7, 0.9) 2.37 dd (14.7, 6.6) 2.02 dt (5.0, 2.5, 2.5) 7.15-7.6 m 8.0 s 0.66 s 1.22 s & 1.17 s 1.39 qt (2.5, 2.5, 2.5, 2.5, 2.5, 2.5) 1.66 dt (13.3, 2.5) 2.17 dq (13.3, 2.5, 2.5, 2.5, 2.5) 1.99 ddq (14.5, 5.5, 2.5, 2.5, 2.5) 1.61 ttd (14, 14, 5.0, 2.5) 3.16 td (14, 14, 5.5) 1.00 ddd (14, 5.0, 2.5)
NAME: (-)-Eburnanone FREQUENCY: 400 MHz SOLVENT: $CDCl_3$ REFERENCE: (15) X.Z. Feng et al., <i>J. Nat. Prod.</i>, 1984, 47, 117. NOTES:	MW: 294 MF: $C_{19}H_{22}N_2O$ NO: 11 3.85 s 7.40 d 7.24 t 7.28 t 8.35 d 2.55 def d 2.62 def d 1.62 dq 2.02 dq 0.94 t 2.86 m 2.41 br d 3.28 dd 3.16 ddd 2.58 br d 2.35 br dd 1.72 br ddd 1.38 br d 0.98 ddd 1.47 br d
NAME: 1,2-Dehydrodeacetylretuline FREQUENCY: 400 MHz SOLVENT: $CDCl_3$ REFERENCE: (14) G. Massiot et al., <i>Tetrahedron</i>, 1983, 39, 3645. NOTES:	MW: 294 MF: $C_{19}H_{22}N_2O$ NO: 10 3.15 ddd (15, 8, 2) 2.65 ddd (15, 10, 7) 3.36 ddd (12, 10, 2) 2.18 m (12, 8, 7) 7.56 m 7.12 m 7.73 m 4.57 q (4) 4.35 dd (13, 4) 4.00 dd (13, 4) 3.85 br s ($W_f=8$) 2.43 ddd (13, 3, 2) 2.56 d (13) 1.33 br d (13) 2.13 ddd (12, 4, 2) 5.37 dq (7, 1.5) 1.61 dd (7, 2) 3.33 br s ($W_f=10$)
NAME: Hobartine FREQUENCY: 200 MHz SOLVENT: $CDCl_3$ REFERENCE: (11) R. Kyburz et al., <i>Helv. Chim. Acta</i>, 1979, 62, 2539. NOTES:	MW: 294 MF: $C_{20}H_{26}N_2$ NO: 12 1.17^s 2.84 ddd (15.5, 6.4, 0.9) 2.69 ddd (15.5, 7.7, 0.9) 7.63 ddd (7.3, 1.2, [0.7]) 7.09 [ddd (7.3, 7.2, 1.5)] 7.18 ddd (7.6, 7.2, 1.2) 7.34 ddd (7.6, 1.5, [0.7]) 8.01 br s 7.08 [s (0.9)] 3.49 ddd (7.7, 6.4, 2.5) 1.65-1.71 br s 2.17 [ddd (3.1, 2.7, 2.5, <1.5)] 2.07 [dt (12.5, 2.7)] 1.61 dt (12.5, 3.1) 1.61 [ddd (<1.5, <1.5, <1.5)] 5.62 [ddd (3.6, 3.3, <1.5)] 2.06 [ddd (18.5, 4.8, 3.3, <1)] 2.28 [ddd (18.5, 4.8, 3.3, <1)] 1.46 [ddd (4.8, 3.1, 2.7, <1.5)] 1.10^s

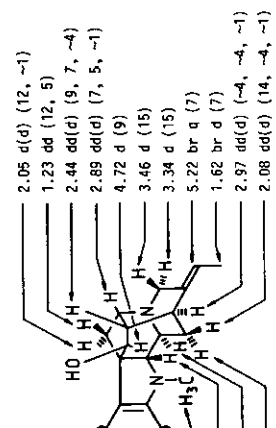
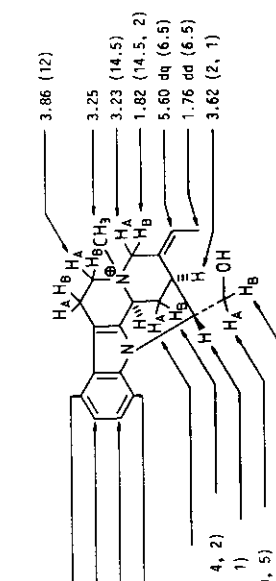
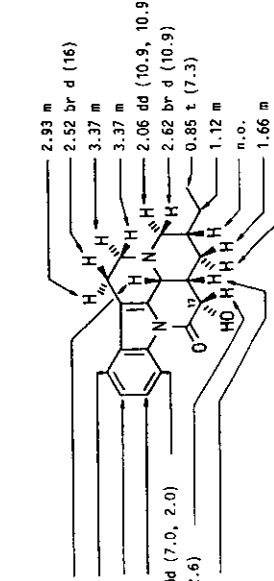
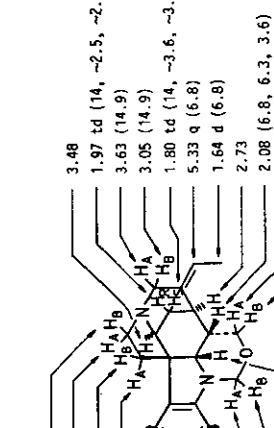
NAME: Normacusine B FREQUENCY: 400 MHz REFERENCE: (16) M. Lounasmaa et al., <i>Planta Med.</i>, 1985, 519. NAME: Tacamonine FREQUENCY: 300 MHz REFERENCE: (18) T.A. van Beek et al., <i>Tetrahedron</i>, 1984, 40, 737. MF: $C_{19}H_{22}N_2O$ NO: 13 MF: $C_{19}H_{22}N_2O$ NO: 15 NOTES:	NAME: N-Decetylisoretuline FREQUENCY: 300 MHz REFERENCE: (19) D. Tavernier et al., <i>Bull. Soc. Chim. Belg.</i>, 1978, 82, 595. NAME: Strepellipine FREQUENCY: 200/360 MHz REFERENCE: (17) A. Laguna et al., <i>Planta Med.</i>, 1984, 50, 285. MF: $C_{19}H_{22}N_2O$ NO: 14 MF: $C_{19}H_{22}N_2O$ NO: 16 NOTES: Signals not assigned: 1.51 (1H, m) and 2.28 (3H, m).	NAME: Normacusine B FREQUENCY: 400 MHz REFERENCE: (16) M. Lounasmaa et al., <i>Planta Med.</i>, 1985, 519. NAME: Tacamonine FREQUENCY: 300 MHz REFERENCE: (18) T.A. van Beek et al., <i>Tetrahedron</i>, 1984, 40, 737. MF: $C_{19}H_{22}N_2O$ NO: 13 MF: $C_{19}H_{22}N_2O$ NO: 15 NOTES:	NAME: N-Decetylisoretuline FREQUENCY: 300 MHz REFERENCE: (19) D. Tavernier et al., <i>Bull. Soc. Chim. Belg.</i>, 1978, 82, 595. NAME: Strepellipine FREQUENCY: 200/360 MHz REFERENCE: (17) A. Laguna et al., <i>Planta Med.</i>, 1984, 50, 285. MF: $C_{19}H_{22}N_2O$ NO: 14 MF: $C_{19}H_{22}N_2O$ NO: 16 NOTES: Signals not assigned: 1.51 (1H, m) and 2.28 (3H, m).
2.62 d(d) (15, -1) 3.05 dd (15, 5) 7.46 7.09 7.14 7.30 7.88 br s 4.11 d(d) (10, -2) 2.00 dd(d) (12, 10, -3) 1.73 dd(d) (12, -2, -2) 2.80 m (5, -2, -1) 1.83 dd (-7, -7, -3, -2) 3.54 def (-7) 3.54 def (-7) 3.57 def 3.50 def 5.38 br q (7) 1.62 d(dd) (7) 2.80 m (-3, -3, -2) 	4.33 m 7.43 m 7.32 ddd (7.3, 7.3, 1.8) 7.28 ddd (7.3, 7.3, 1.8) 8.38 br dd (7.3, 1.8) 2.99 dd (17.0, 4.9) 2.66 dd (17.0, 2.3) 2.45 m 2.89 m 2.48 br ddd (17.0, 7.1, 3.1) 3.30 m 3.38 m 2.03 dd (11.0, 10.9) 2.64 ddd (10.9, 3.7, 1.7) 0.85 t (7.4) 1.10 m 1.52 m 1.66 br d (12.6) 0.56 ddd (12.6, 12.6, 12.6) 	3.25 br t (8.0, 6.5) 7.17 br d (7.4) 7.06 br t (7.4, 7.4) 7.23 br t (8.0, 7.4) 8.05 br d (8.0) 2.03 s 2.63 d (18.2) 2.46 dd (18.2, 2.4) 1.96 m (14.1, 8.0, 8.0, 6.0) 2.09 dq (14.1, 6.5, 6.0, 5.8) 2.23 dt (11.2, 6.0, 6.0) 2.97 ddd (11.2, 8.0, 5.8) 2.04 m (12.5, 11.2, 3.0) 2.86 dt (11.2, 4.0, 4.0) 1.59 m (13.3, 4.8, 4.0, 2.5) 1.85 tq (13.3, 13.0, 12.5, 4.0, 4.0) 1.28 dt (13.5, 13.0, 4.8) 1.74 dm (13.5, 4.0, 2.5) 	2.81 (12, -8, -6) 3.15 (12, -10, -8) 1.84 (13.5, -10, -8) 2.53 (13.5, -8, -8) 7.05 6.75 7.04 (7.8) 6.63 (7.8) 3.46 (9.5) 1.78 (9.5, 9.0, 5.0, -4) 3.48 (3.3, 2.7) 1.72 (13.2, 2.7, 2.7) 3.03 (13.6, 2.0, 1.8) 3.43 (13.6) 1.94 (13.2, 3.3, 3.3) 5.47 (6.8, 1.8) 1.57 (6.8, 2.0) 2.70 (-4, 3.3, 2.7) 3.67 (10.2, 5.0) 3.52 (10.2, 9.0) 

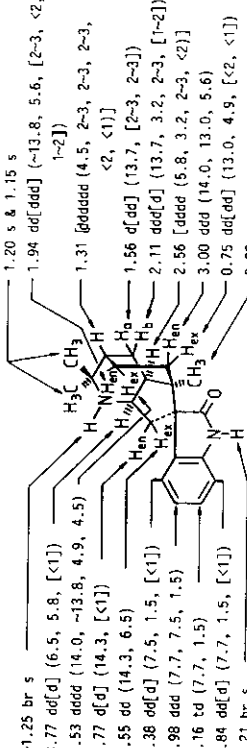
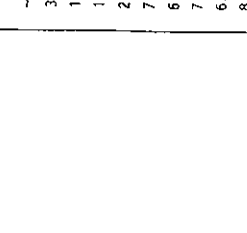
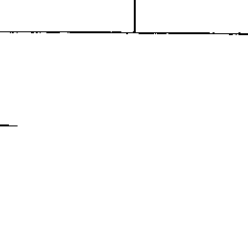
NAME: N-Decacetylretuline FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (19) D. Tavernier et al., Bull. Soc. Chim. Belg., 1978, 82, 595. NOTES:	MM: 296 MF: $\text{C}_{19}\text{H}_{24}\text{N}_2\text{O}$ NO: 17 2.95 (11, -7, -7) 3.18 (11, -7, -7) 2.09 (13, -7, -7) 2.25 (13, -7, -7) 7.08 6.78 7.05 (7.8) 6.65 (7.8) 3.93 (6) 3.80 (-11, -10) 3.79 (-11, -5)
NAME: 16S-Decarboethoxytacetamine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (18) T. A. van Beek et al., Tetrahedron, 1984, 40, 737. NOTES:	MM: 296 MF: $\text{C}_{19}\text{H}_{24}\text{N}_2\text{O}$ NO: 19 4.35 m 7.43 dd (7.4, 1.2) 7.22 odd (7.4, 7.4, 1.2) 7.17 odd (7.4, 7.4, 1.2) 7.52 dd (7.4, 1.2) 6.06 dd (4.0, 1.2) 2.26 ddd (15.5, 3.5, 1.2) 2.40 ddd (15.5, 4.0, 4.0) 1.77 br d (12.8) 1.13 m 1.58 m 1.13 ddd (12.8, 12.5, 12.5)
NAME: 16R-Decarboethoxytacetamine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (18) T. A. van Beek et al., Tetrahedron, 1984, 40, 737. NOTES:	MM: 296 MF: $\text{C}_{19}\text{H}_{24}\text{N}_2\text{O}$ NO: 16 4.20 m 7.46 dd (6.9, 1.8) 7.17 odd (6.9, 6.9, 1.8) 7.15 odd (6.9, 6.9, 1.7) 7.73 dd (6.9, 1.7) 5.58 dd (9.5, 5.4) 2.45 odd (13.9, 5.4, 3.2) 1.89 odd (13.9, 9.5, 3.6) 2.24 m 2.91 m 2.50 m 3.14 m 3.20 m 1.92 dd (11.0, 11.0) 2.50 m 0.81 t (7.2) 1.02 m 1.40 m 1.53 br d 0.37 ddd (12.7, 12.7, 12.7)
NAME: Deethylbophyllidine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (20) C. Kan et al., Tetrahedron Lett., 1980, 21, 55. NOTES:	MM: 296 MF: $\text{C}_{18}\text{H}_{20}\text{N}_2\text{O}$ NO: 20 3.36 td (12.5, 12.5, 5.5) 2.89 ddd (12.5, 6, 0.5) 1.64 ddd (12.5, 5.5, 0.5) 2.03 td (12.5, 12.5, 6) 7.30 6.86 7.13 6.78 9.03 br s 2.73 td (11.5, 9, 5.5) 3.28 ddd (11.5, 7, 0.5) 2.02 m (11.5, 9, 6.5, 6, 0.5) 1.74 ddt (12.5, 5.5, 0.5, 0.5) 2.12 dtd (12.5, 9, 9, 7) 1.84 dd (14.5, 11.5) 2.78 dd (14.5, 6) 3.75 d (6.5) 3.74 s

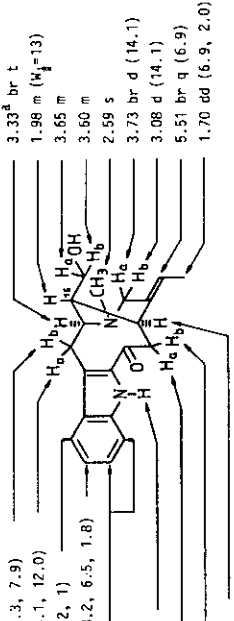
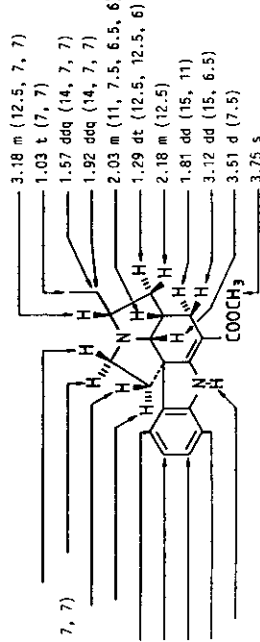
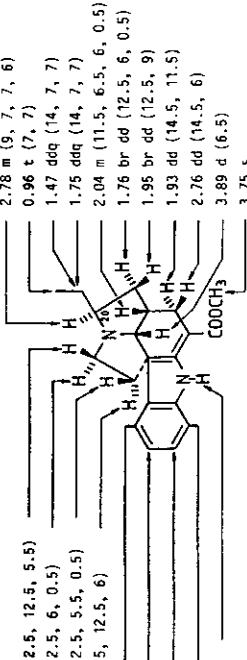
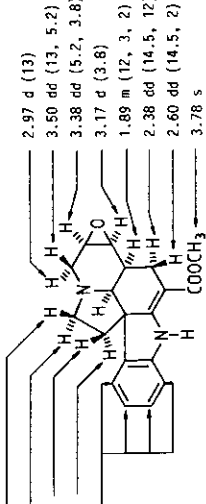
NAME: Dichonine FREQUENCY: 300 MHz REFERENCE: (21) P. Perera et al., <i>Planta Med.</i>, 1983, 49, 232. NOTES:	MM: 296 MF: $C_{19}H_{24}N_2O$ NO: 21  3.16 (12.2, 7.5, 1.4) 3.31 (12.2, 10.6, 7.2) 3.81 2.47 (14.0, 10.6, 7.5) 1.65 (14.0, 7.2, 1.4) 7.14 (7.7, 1.6, <1) 6.82 (7.7, 7.7, 1.0) 7.05 (7.7, 7.7, 1.0) 5.60 (7.7, 1.0, <1) 4.59 2.26 (15.8, 11.4, 6.9) 2.05 (15.8, 7.2, 1.7)
NAME: Geissoschizol FREQUENCY: 400 MHz REFERENCE: (22) X.Z. Feng et al., <i>Planta Med.</i>, 1982, 44, 212. NOTES:	MM: 296 MF: $C_{19}H_{24}N_2O$ NO: 23  7.52 7.14 7.18 7.38 8.20 br s 4.24 br s 2.33^a m 2.21^a m 1.55 m (7, 5) 2.68 br d (15, -4, -1) 3.05 m (15, 12, -5) 3.08^b ddd (12, -12, -4) 3.27^b m (-12, -5, -1) 3.68 br d (12, <0.5) 3.01 br d (12, <0.5) 3.0 m 5.56 br q (6.5, <0.5, <0.5) 1.67 d(d) (6.5) 3.60 br dd (7) 3.56 br dd (5)
NAME: (+)-Eburnamine FREQUENCY: 400 MHz REFERENCE: (15) X.Z. Feng et al., <i>J. Nat. Prod.</i>, 1984, 47, 117. NOTES:	MM: 296 MF: $C_{19}H_{24}N_2O$ NO: 22  3.50 s 7.46 d 7.14 t 7.17 t 7.73 d 5.51 dd 2.21 dd 1.42 dd 1.37 dq 2.00 dq 2.90 m 2.48 br d 3.20 dd 3.28 ddd 2.46 br d 2.28 br dd 1.66 br ddd 1.27 br d 0.79 ddd 1.33 br d 0.87 t
NAME: 20S-Hydroxy-1,2-dehydropseudoaspidoepimidine FREQUENCY: 300 MHz REFERENCE: (18) T.A. van Beek et al., <i>Tetrahedron</i>, 1984, 40, 737. NOTES:	MM: 296 MF: $C_{19}H_{24}N_2O$ NO: 24  2.88 (11.4, 8.4, 4.8) 3.18 (8.4, 6.7, -2) 2.82 (2.9, <1) 1.82 (12.1, 4.8, 2) 2.31 (12.1, 11.4, 6.7) 7.35 (7.7, 1.4, <0.5) 7.30 (7.7, 1.1) 7.17 (7.7, 1.4) 7.51 (7.7, 1.1, <0.5) 2.97 (15.4, 11.0, 3.7) 2.78 (15.4, 9.9, 6.5) 3.12 (10.5, 1.8) 2.36 (10.5) 1.77 (14.8, 7.5, -0.5) 1.96 (14.8, 7.5) 0.97 (7.5, 7.5) 1.41 (13.6, 5.6, -0.5) 1.83 (13.6, 1.9, 1.8) 1.53 (12.9, 5.6, 5.6, 2.9, 1.9) 1.75 (12.2, 9.9, 5.6, 3.7, <1) 2.52 (12.9, 12.2, 11.0, 6.5)

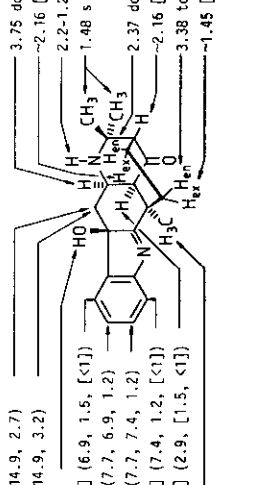
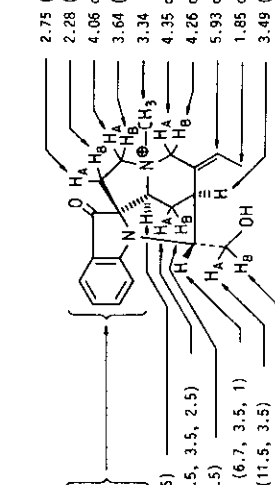
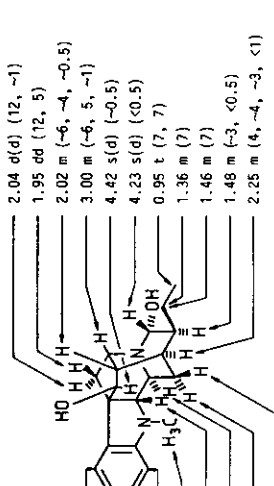
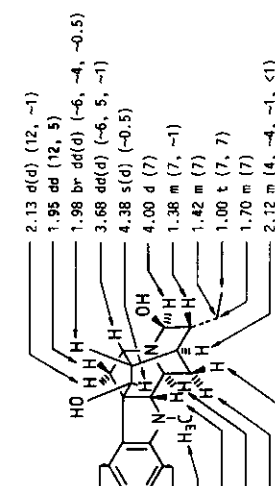
NAME: (-)-Isoeburnamine FREQUENCY: 400 MHz REFERENCE: (15) X.Z. Feng et al., J. Nat. Prod., 1984, 49, 117. NOTES:	NAME: Isomalinidine FREQUENCY: 360 MHz REFERENCE: (24) M. Caprasse et al., Planta Med., 1984, 50, 27. NOTES: The shifts of five protons not given.	MI: 296 MF: $C_{19}H_{24}N_2O$ NO: 25  3.85 s 7.41 d 7.15 t 7.19 t 7.51 d 6.07 d 2.00 dd 2.19 d 1.47 dq 2.17 dq	MI: 304 MF: $C_{20}H_{22}N_3$ NO: 27  7.57 d (7.75) 7.11 t (7.75, ~7.5) 7.21 t (8, ~7.5) 7.44 d (8) 3.37 m (12.5, 5) 3.97 m (18.7, 12.5) 7.48 d (5.2) 8.53 d (5.2) 5.64 m (18.7, 5) 3.11 s 1.93 d (6.9) 5.16 q (6.9) 8.57 s
NAME: Voaphylline FREQUENCY: 300 MHz REFERENCE: (23) P. Perera et al., Planta Med., 1983, 49, 28. NOTES:	NAME: Malindine FREQUENCY: 360 MHz REFERENCE: (24) M. Caprasse et al., Planta Med., 1984, 50, 27. NOTES: The shifts of five protons not given.	MI: 296 MF: $C_{19}H_{24}N_2O$ NO: 26  2.81 dd (4.7, 3.9) 2.82 dd (8.7, 3.9) 2.30 ddd (12.8, 8.7, 4.7) 2.59 dt (12.8, 3.9, 3.9) 7.23 dd (7.2, 1.6) 7.03-7.11 m 7.45 dd (7.2, 1.9) 7.85 br s 2.66 d (12.5) 3.28 d (12.5)	MI: 304 MF: $C_{20}H_{22}N_3$ NO: 26  7.56 d (7.75) 7.12 t (7.75, ~7.5) 7.22 t (8.0, ~7.5) 7.43 d (8.0) 3.45 m (~12, 5) 3.92 m (~18.4, ~12) 7.49 d (5.2) 8.57 d (5.2) 5.5 m (~18.4, 5) 2.94 s 5.23 q (6.6) 2.08 d (6.6) 8.72 s

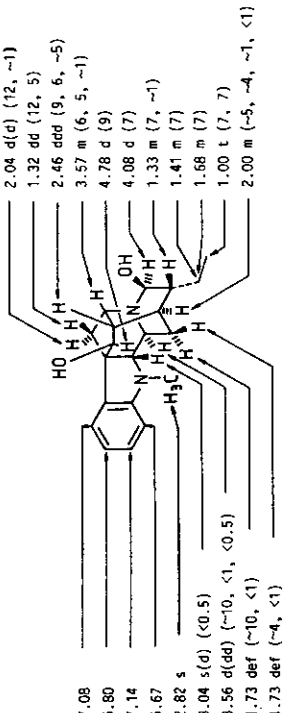
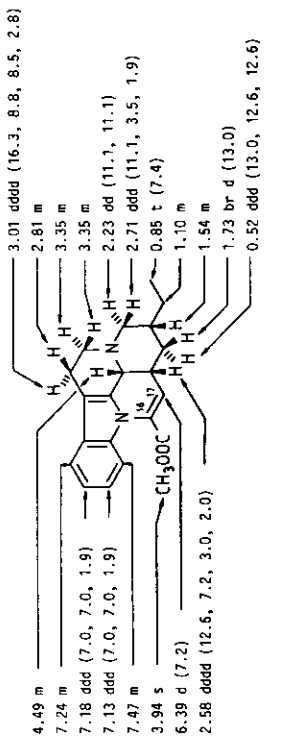
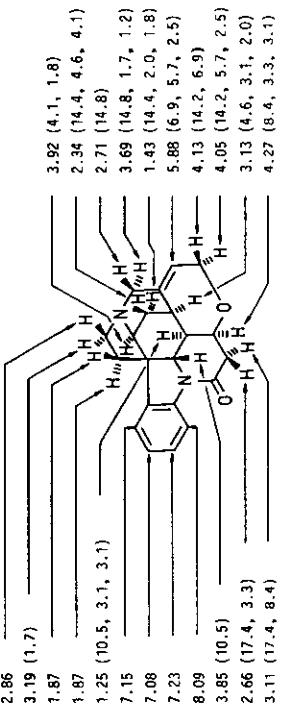
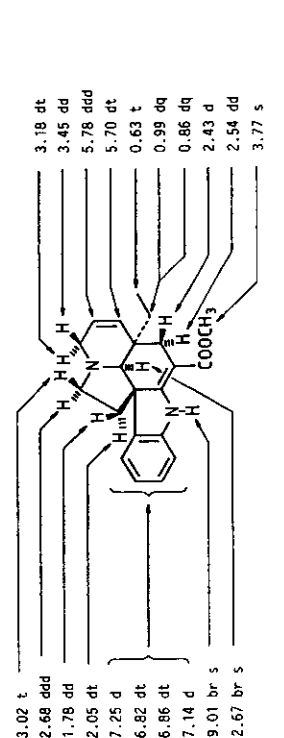
NAME: Peduncularistine FREQUENCY: 200 MHz SOLVENT: CDCl₃ REFERENCE: (25) R. Kyburz et al., <u>Helv. Chim. Acta</u>, 1984, <u>67</u>, 804. NOTES: Three CH₃-groups at 1.44 (s), 1.25 (s) and 1.03 (s).	NAME: Affinisine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (16) M. Lounasmaa et al., <u>Planta Med.</u>, 1985, 519. NOTES:	NAME: 306 MF: C₂₀H₂₂N₂O NO: 29  3.07 dd (16.3, 2.3) 3.01 dd (16.3, 4.9) 2.60 ddd (2.8, 1.4, 1.2) 7.50 ddd (7.9, 1.4, 0.8) 7.12 ddd (7.9, 6.6, 1.4) 7.20 ddd (8.0, 6.6, 1.4) 7.36 ddd (8.0, 1.4, 0.8) 8.00 br s 3.69 ddd (4.9, 2.8, 2.3) 1.95 br s 2.65 dd[d] (6.1, 1.4, [<1]) 5.64 dd (9.5, 6.1) 6.05 dd[d] (9.5, 1.2, [<1])
NAME: Strychnoxanthine FREQUENCY: 360 MHz SOLVENT: D₂O REFERENCE: (26) C. Courne et al., <u>Planta Med.</u>, 1984, <u>50</u>, 93. NOTES:	NAME: Aristoserratine FREQUENCY: 200/270 MHz SOLVENT: CDCl₃ REFERENCE: (27) M.A. Hat et al., <u>Helv. Chim. Acta</u>, 1980, <u>63</u>, 2130. NOTES: Three CH₃-groups at 1.38 (3H, s) and 1.19 (6H, s).	NAME: 307 MF: C₁₉H₁₉N₂O NO: 30  8.16 7.42 7.70 7.64 3.25 (2.5, 2.5) 2.68 (14.8, 2, 2) 2.24 (8.6, 6.6, 5.5, 1-2) 8.57 8.57 5.36 (3, 2.8, 2.5, 2, W₂=9.2) 2.76 (14.8) 2.37 (14.8, 14.6, 5.5) 2.04 (14.8, W₂=11) 1.30 (15.0) 1.75 (15.0) 4.00 (11.4, 8.6) 3.89 (11.4, 6.6)
	NAME: 308 MF: C₂₀H₂₄N₂O NO: 31  2.52 d(d) (15, ~1) 3.03 dd (15, 5) 7.44 7.09 7.19 7.32 3.63 s 4.18 dd (10, ~2) 2.03 dd(d) (12, 10, ~3) 1.58 dd(d) (12, ~3, ~2) 2.74 m (5, ~2, ~1) 1.74 br dd (~7, ~7, ~3, ~2) 3.44 dd (~7) 3.51 dd (~7) 3.58 def d 3.54 def d 5.37 br q (7) 1.60 d(dd) (7) 2.75 m (~3, ~3, ~3)	NAME: 308 MF: C₂₀H₂₄N₂O NO: 32  2.80 dd (16.8, 1.5) 3.08 dd (16.8, 5.7) 2.35 dd (2.5, 1.3) 7.47 ddd (7.5, 1.5, 0.8) 7.09 ddd (7.5, 6.5, 1.5) 7.15 ddd (7.5, 6.5, 1.5) 7.30 ddd (7.5, 1.5, 0.8) 8.18 br s 1.65 ddd (13.8, 5.6, 2.0) 2.58 td (13.8, 13.8, 5.8) 3.79 ddd (5.7, 2.5, 1.5) 1.92 ddd (14.2, 13.8, 5.6, 3.8) ~1.5 br s 2.18 dddd (14.2, 5.8, 2.5, 2.0) 2.08 ddd (3.8, 2.5, 1.3)

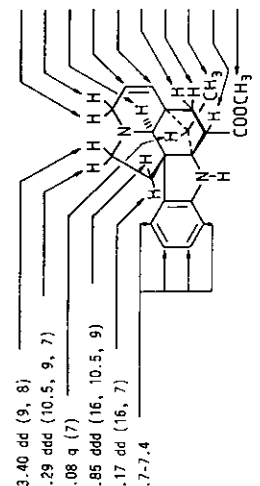
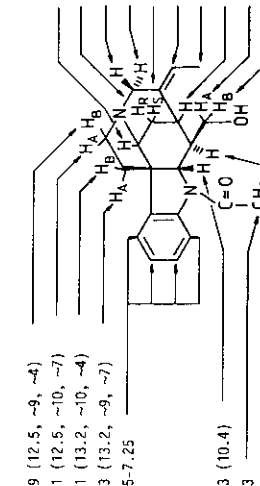
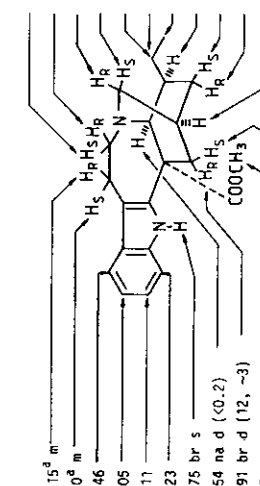
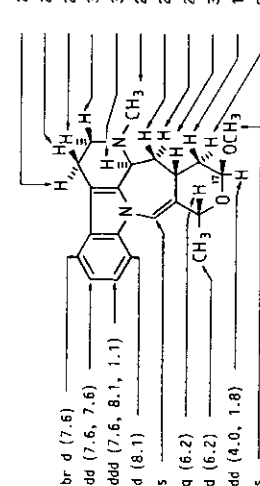
NAME: Mautensine FREQUENCY: 400 MHz REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NO: 33 NOTES:	NAME: Mavacurine FREQUENCY: 360 MHz REFERENCE: (29) M. Tits et al., <i>Planta Med.</i>, 1981, 42, 371. NOTES: The shifts of five protons not given.	NAME: 17-Hydroxytacamonine FREQUENCY: 300 MHz REFERENCE: (18) T.A. van Beek et al., <i>Tetrahedron</i>, 1984, 40, 737. NO: 36 NOTES:
NAME: 308 MF: $C_{20}H_{24}N_2O$ NO: 33  7.10 6.81 7.16 6.66 2.78 s 3.07 s(d) (<0.5) 3.62 d(dd) (10, ~1, <0.5) 1.78 dd(d) (14, 10, ~1) 2.05 d(d) (12, ~1) 1.23 dd (12, 5) 2.44 dd(d) (9, 7, ~4) 2.89 dd(d) (7, 5, ~1) 4.72 d (9) 3.46 d (15) 3.34 d (15) 5.22 br q (7) 1.62 br d (7) 2.97 dd(d) (~4, ~4, ~1) 2.08 dd(d) (14, ~4, ~1)	NAME: 309 MF: $C_{20}H_{25}N_2O$ NO: 35  7.67^a d 7.31^b t 7.21^b t 7.59^a d 2.86 (15.5) 2.54 (15.5, 4, 2) 4.06 (8, 5, 1) 4.20 dd (10, 5) 4.11 dd (10, 8) 3.86 (12) 3.25 3.23 (14.5) 1.82 (14.5, 2) 5.60 dq (6.5) 1.76 dd (6.5) 3.62 (2, 1)	NAME: 310 MF: $C_{19}H_{22}N_2O_2$ NO: 36  4.65 m 7.46 m 7.33 m 7.33 m 8.34 br dd (7.0, 2.0) 4.36 d (2.6) 2.62 m 2.93 m 2.52 br d (16) 3.37 m 3.37 m 2.06 dd (10.9, 10.9) 2.62 br d (10.9) 0.85 t (7.3) 1.12 m n.o. 1.66 m 0.40 ddd (12.4, 12.4, 12.4)
NAME: Rosbiline FREQUENCY: 360 MHz REFERENCE: (28) M. Tits et al., <i>Phytochemistry</i>, 1980, 19, 1531. NOTES:	NAME: 308 MF: $C_{20}H_{24}N_2O$ NO: 34  2.92 (11, 8.8, 6.5) 3.20 (11, 7.6, 4) 2.06 (13, 6.5, 4) 2.22 (13, 8.8, 7.6) 7.11 d 6.76 t 7.12 t 6.53 d 5.19 d (9) 4.55 d (9) 3.65 (6.3) 3.48 1.97 td (14, ~2.5, ~2.5) 3.63 (14.9) 3.05 (14.9) 1.80 td (14, ~3.6, ~3.6) 5.33 q (6.8) 1.64 d (6.8) 2.73 2.08 (6.8, 6.3, 3.6) 3.80 (11, 6.8) 3.63 (11, 3.6)	

NAME: Tasmanine FREQUENCY: 360 MHz REFERENCE: (30) R. Kyburz et al., <u>Helv. Chim. Acta</u>, 1981, 64, 2555. NOTES:	MM: 310 MF: C₂₀H₂₆N₂O NO: 37  ~1.25 br s 3.77 dd[d] (6.5, 5.8, <1]) 1.53 ddd (14.0, ~13.8, 4.9, 4.5) 1.77 d[d] (14.3, <1]) 2.55 dd (14.3, 6.5) 7.38 dd[d] (7.5, 1.5, <1]) 6.98 dd (7.7, 7.5, 1.5) 7.16 td (7.7, 1.5) 6.84 dd[d] (7.7, 1.5, <1]) 8.21 br s 1.20 s & 1.15 s 1.94 dd[ddd] (~13.8, 5.6, [2-3, <2, 1-2]) 1.31 dddd (4.5, 2-3, 2-3, 2-3, <2, <1]) 1.56 d[d] (13.7, [2-3, 2-3]) 2.11 dd[d] (13.7, 3.2, 2-3, [1-2]) 2.56 [ddd] (5.8, 3.2, 2-3, <2]) 3.00 dd (14.0, 13.0, 5.6) 0.75 dd[dd] (13.0, 4.9, <2, <1]) 0.88 s
NAME: Deacetyldeformakumiline FREQUENCY: 400 MHz REFERENCE: (31) F. Guérin et al., <u>J. Nat. Prod.</u>, 1983, 46, 144. NOTES:	MM: 322 MF: C₂₀H₂₂N₂O NO: 39  2.10 d (8) 7.45^a d (7.5) 7.20^b dd (7.5, 7.5) 7.36^b dd (7.5, 7.5) 7.64^a d (7.5) 4.77 d (5) 1.78 dd (14, 3) 2.75 br d (14) 2.63 m 2.79 m 3.75 s 2.03 dd (14, 4) 3.74 m 3.20 d (17) 4.13 dd (17, 2.5) 5.56 m 1.57 dd (7, 2.5) 3.54 m
NAME: Pericyclivine FREQUENCY: 400 MHz REFERENCE: (16) M. Lounasmaa et al., <u>Planta Med.</u>, 1985, 519. NOTES:	MM: 322 MF: C₂₀H₂₂N₂O NO: 40  3.23 dd (16, ~1) 2.92 dd (16, 5) 7.41 7.04 7.09 7.23 8.14 s 4.11 d (10, ~2) 1.65 dd(d) (12, 10, ~3) 2.53 ddd (12, ~4, ~2) 3.68 dd (12, 5, ~1) 3.06 s 2.82 dd (12, ~3) 3.59 def 3.56 def 5.25 br q (7) 1.60 d(dd) (7) 2.96 m (~4, ~3, ~3)
NAME: N₅-Methylantirrhine FREQUENCY: 360 MHz REFERENCE: (24) M. Caprasse et al., <u>Planta Med.</u>, 1984, 50, 27. NOTES: The shifts of three protons not given.	MM: 311 MF: C₂₀H₂₇N₂O NO: 38 7.50 d 7.08 t 7.18 t 7.40 d 5.02 br s (W₂=10) 2.56 m (12, ~4.8) 2.37 m (12, ~4.8) 3.62 d (2H) 2.44 m (~9) 3.24 m (~16) 3.11 m (~16) 3.93 m (~12.4) 3.85 m (~12.4) 3.38 s 3.7 m 1.82 m (2H) 1.66 m (W₂=40) 5.2 m (2H) 5.7 m (~9)

NAME: 16-Epiaffinine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (32) T.A. van Beek et al., <i>Phytochemistry</i>, 1984, 23, 1771. NOTES:	MW: 324 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2$ NO: 41  2.67 dd (13.3, 7.9) 3.32 dd (13.1, 12.0) 7.52 dd (8.2, 1) 7.18 ddd (8.2, 6.5, 1.8) 7.42 m 9.15 br s 3.52 m 3.47 m 3.09^a br t 3.33^a br t 1.98 m ($M_{\text{H}}=13$) 3.65 m 3.60 m 2.59 s 3.73 br d (14.1) 3.08 d (14.1) 5.51 br q (6.9) 1.70 dd (6.9, 2.0)
NAME: Ibophyllidine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (20) C. Kan et al., <i>Tetrahedron Lett.</i>, 1980, 21, 55. NOTES:	MW: 324 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2$ NO: 43  3.15 m (10) 2.77 d (10, 7, 7) 2.2 m (7) 2.27 td (7) 7.50 6.92 7.13 6.79 9.12 br s 3.18 m (12.5, 7, 7) 1.03 t (7, 7) 1.57 ddq (14, 7, 7) 1.92 ddq (14, 7, 7) 2.03 m (11, 7.5, 6.5, 6) 1.29 dt (12.5, 12.5, 6) 2.18 m (12.5) 1.81 dd (15, 11) 3.12 dd (15, 6.5) 3.51 d (7.5) 3.75 s
NAME: 20-Epi-ibophyllidine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (20) C. Kan et al., <i>Tetrahedron Lett.</i>, 1980, 21, 55. NOTES:	MW: 324 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2$ NO: 42  3.36 td (12.5, 12.5, 5.5) 2.97 ddd (12.5, 6, 0.5) 1.64 ddd (12.5, 5.5, 0.5) 2.04 m (12.5, 12.5, 6) 7.40 6.87 7.16 6.83 9.05 br s 2.78 m (9, 7, 7, 6) 0.96 t (7, 7) 1.47 ddq (14, 7, 7) 1.75 ddq (14, 7, 7) 2.04 m (11.5, 6.5, 6, 0.5) 1.76 br dd (12.5, 6, 0.5) 1.95 br dd (12.5, 9) 1.93 dd (14.5, 11.5) 2.76 dd (14.5, 6) 3.89 d (6.5) 3.75 s
NAME: Rosicine FREQUENCY: 250 MHz SOLVENT: CDCl_3 REFERENCE: (33) Atta-ur-Rahman et al., <i>Tetrahedron Lett.</i>, 1984, 25, 6051. NOTES: The shifts of two protons not given.	MW: 324 MF: $\text{C}_{19}\text{H}_{20}\text{N}_2\text{O}_3$ NO: 44  2.88 dd (8.3, 6.3) 2.50 m (8.3, 4.2) 1.87 dd (11.6, 6.3) 1.74 dd (11.6, 4.2) 6.84-7.28 m 2.97 d (13) 3.50 dd (13, 5.2) 3.38 dd (5.2, 3.8) 3.17 d (3.8) 1.89 m (12, 3, 2) 2.38 dd (14.5, 12) 2.60 dd (14.5, 2) 3.78 s

NAME: Triabumine FREQUENCY: 200 MHz SOLVENT: CDCl₃ REFERENCE: (25) R. Kyburz et al., <i>Helv. Chim. Acta</i>, 1984, 67, 804. NO: 45 NOTES:	NAME: Ajmaline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NO: 47 NOTES:	NAME: 324 MF: C₂₀H₂₄N₂O₂ NO: 45  2.64 dd (14.9, 2.7) 1.57 dd (14.9, 3.2) 1.25 br s 7.39 dd(d) (6.9, 1.5, <11) 7.24 ddd (7.7, 6.9, 1.2) 7.36 ddd (7.7, 7.4, 1.2) 7.57 dd(d) (7.4, 1.2, <11) 2.07 ddd (2.9, [1.5, <11]) 1.22 s 3.75 ddd (3.2, 2.9, 2.7) -2.16 [ddd (-15, 14.2, -6.5)] 2.2-1.2 br 1.48 s & 1.39 s 2.37 dd[dd] (-15, 6.4, [-3, <15]) -2.16 [ddd (-3, 1.5, <11)] 3.38 td (14.2, 6.4) -1.45 [dddd (14.2, -6.5, <1.5, <1, <11)]	NAME: Isoajmaline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NO: 48 NOTES: 17R.	NAME: 325 MF: C₂₀H₂₅N₂O₂ NO: 46  7.58 d 7.55 t 6.87 t 7.20 d 4.15 (2.5) 2.41 (15.5, 3.5, 2.5) 2.07 (15.5) 4.18 ddd (6.7, 3.5, 1) 4.34 dd (11.5, 3.5) 3.83 dd (11.5, 6.7) 2.75 (13.5, 13, 7) 2.28 (13.5, 12, 7) 4.06 dd (12, 7) 3.64 (13, 12, 7.2) 3.34 4.35 d (14.8) 4.26 d (14.8) 5.93 q (7) 1.85 d (7) 3.49 (3.5, 1)	NAME: 326 MF: C₂₀H₂₆N₂O₂ NO: 47  7.46 6.75 7.13 6.63 2.77 s 2.62 s(d) (<0.5) 3.58 d(dd) (10, <1, <0.5) 1.84 dd(d) (14, 10, <1) 1.48 m (14, 4, <1) 2.04 d(d) (12, -1) 1.95 dd (12, 5) 2.02 m (-6, -4, -0.5) 3.00 m (-6, 5, -1) 4.42 s(d) (-0.5) 4.23 s(d) (<0.5) 0.95 t (7, 7) 1.36 m (7) 1.46 m (7) 1.48 m (-3, <0.5) 2.25 m (4, -4, -3, <1)	NAME: 326 MF: C₂₀H₂₆N₂O₂ NO: 48  7.45 6.78 7.17 6.66 2.78 s 2.62 s(d) (<0.5) 3.37 d(dd) (10, <1, <0.5) 1.76 dd(d) (14, 10, <1) 1.18 dd(d) (14, 4, <1) 2.13 d(d) (12, -1) 1.95 dd (12, 5) 1.98 br dd(d) (-6, -4, -0.5) 3.68 dd(d) (-6, 5, -1) 4.38 s(d) (-0.5) 4.00 d (7) 1.38 m (7, -1) 1.42 m (7) 1.00 t (7, 7) 1.70 m (7) 2.12 m (4, -4, -1, <1)
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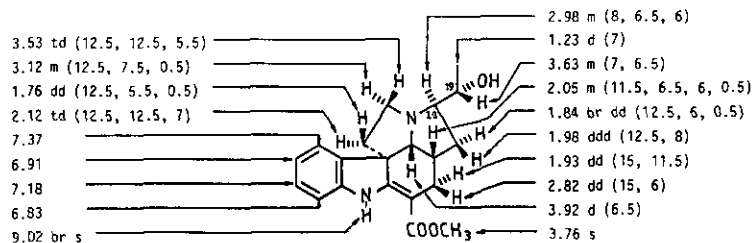
NAME: Isosandwichine FREQUENCY: 400 MHz REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NO: 49 NOTES: 175.	NAME: 16,17-Anhydrotacamine FREQUENCY: 300 MHz REFERENCE: (18) T.A. van Beek et al., <i>Tetrahedron</i>, 1984, 40, 737. NOTES:
MF: $C_{21}H_{26}N_2O_2$ NO: 50 	MF: $C_{21}H_{24}N_2O_2$ NO: 51 
NAME: Strychnine FREQUENCY: 220 MHz REFERENCE: (34) E. Henkert et al., <i>J. Org. Chem.</i>, 1978, 43, 1099. NOTES: For relaxation and NOE measurements, see Ref. 79.	NAME: Tabersonine FREQUENCY: 400 MHz REFERENCE: (35) R. Wen et al., <i>Heterocycles</i>, 1984, 22, 1061. NOTES:
MF: $C_{21}H_{22}N_2O_2$ NO: 50 	MF: $C_{21}H_{24}N_2O_2$ NO: 52 

NAME: Vindoline FREQUENCY: 300 MHz REFERENCE: (36) L.J. Durham et al., Proc. Natl. Acad. Sci. USA, NO: 53 1974, 21, 3897. NOTES:	NAME: Isoretuline FREQUENCY: 300 MHz REFERENCE: (19) D. Tavernier et al., Bull. Soc. Chim. Belg., 1978, 82, 595. NOTES:
MM: 338 MF: C₂₁H₂₆N₂O₂ NO: 53  ~3.40 dd (9, 8) 3.29 ddd (10.5, 9, 7) 2.08 q (7) 1.85 ddd (16, 10.5, 9) 2.17 dd (16, 7) 6.7-7.4 3.45 ddd (18, 3.3, 2) 3.97 dd (18, 5) 3.46 s 5.78 ddd (10, 5, 2) 6.16 dd (10, 3.3) 1.80 dd (14.5, 12) 2.47 dd (14.5, 6) 0.96 d (7) 3.04 dd (12, 6) 3.70 s	MM: 338 MF: C₂₁H₂₆N₂O₂ NO: 53  2.79 (12.5, -9, -4) 3.21 (12.5, -10, -7) 1.81 (13.2, -10, -4) 2.43 (13.2, -9, -7) 7.05-7.25 3.52 (3.3, 2.7) 1.62 (13.2, 2.7, 2.7) 3.21 (13.4, 2.0, 1.8) 3.52 (13.4) 1.96 (13.2, 3.3, 3.3) 5.51 (6.8, 1.8) 1.66 (6.8, 2.0) 2.80 (-4, 3.3, 2.7) 3.64 (12.2, 4.2) 3.58 (12.2, 5.2) 4.73 (10.4) 2.43 1.66 (10.4, 5.2, 4.2, -4)
NAME: Coronaridine FREQUENCY: 400 MHz REFERENCE: (37) C. Kan et al., Planta Med., 1981, 41, 72. NOTES: For reassignment of aromatic protons, see Ref. 49. NOTES:	NAME: 17-O-Methylkribine FREQUENCY: 500 MHz REFERENCE: (38) R. Verpoorte et al., J. Chem. Soc., Perkin Trans. 1, 1984, 1455. NOTES:
MM: 338 MF: C₂₁H₂₆N₂O₂ NO: 54  3.15^a m 3.0^a m 7.46 7.05 7.11 7.23 7.75 br s 3.54 na d (<0.2) 1.91 br d (12, -3) 3.70 s 2.58 br d (12, -3) 3.2^b m 3.4^b m 2.90^c br d (9, -3) 2.80^c br d (9, -3) 1.45 dd (7, -7) 1.55 dq (7, -7) 0.89 t (7, 7) 1.33 br dt (-40, -5, -7, -0.2) 1.14 br dd (12.5, -5) 1.73 br dd (12.5, -10) 1.89 m (-3, -3, -3, -3)	MM: 338 MF: C₂₁H₂₆N₂O₂ NO: 56  7.48 br d (7.6) 7.15 dd (7.6, 7.6) 7.21 ddd (7.6, 8.1, 1.1) 7.33 d (8.1) 6.90 s 4.54 q (6.2) 1.47 d (6.2) 4.89 dd (4.0, 1.8) 3.45 s 2.75 ddd (15.5, 5.0, 2.5, 2) 2.92 ddd (15.5, 10.5, 5.0, 2.5) 2.68 ddd (11.8, 10.5, 4.0) 3.14 ddd (11.8, 4.0, 2.5) 3.44 m 2.52 s 2.16 ddd (13.5, 10.2, 5.0) 2.10 ddd (13.5, 3.5, 2.0) 3.08 m 1.78 ddd (12.9, 4.0, 1.8) 2.15 ddd (12.9, 12.1, 4.0)

NAME: Retuline FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (19) D. Tavernier et al., <i>Bull. Soc. Chim. Belg.</i>, 1978, 87, 595. NOTES: Rotamer a.	MI: 338 MF: $\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}_2$ NO: 57 2.80 3.21 -1.58 -1.98 7.05-7.25 7.22 8.08 4.12 (7.2) 2.30 3.38 (11, 5.5)
NAME: 18-Hydroxy-20-epi-ibophyllidine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (40) C. Kan et al., <i>Tetrahedron Lett.</i>, 1980, 21, 3363. NOTES:	MI: 340 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$ NO: 59 3.38 td (12.5, 12.5, 5) 3.03 br dd (12.5, 6.5, 0.5) 1.70 dd (12.5, 5.5, 0.5) 2.1 m (12.5, 12.5, 6.5) 7.27 6.87 7.15 6.78 9.05 br s 3.30 m (6) 1.62 br dd (12, 3) 2.1 m (12, 3) 4.03 m (12, 3) 3.76 m (12, 3) 2.04 m (11.5, 6.5, 6, 0.5) 1.76 br dd (12.5, 6, 0.5) 2.16 m (12.5) 1.90 dd (15, 11.5) 2.83 dd (15, 6) 3.86 d (6.5) 3.74 s
NAME: 21-Hydroxycyclochoerine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (39) W. Kohl et al., <i>Pflanz Med.</i>, 1984, 50, 242. NOTES:	MI: 340 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$ NO: 58 6.63 br s 3.79 s 6.68 d (8) 7.10 d (8) 4.42 d (8, 2) 1.30 d (15, 2, 2) 1.83 dd (15, 8, 2) 1.33^a br s (2, 2) 3.13 dd (15, 6) 2.53 d (15, 2) 3.55 dd (6, 4, 2) 1.19^a br s (4, 2, 2) 3.41^b dd (2) 3.65^b d (2) 4.07 q (2, 2) 1.24 d (2) 4.81 br s (2) 1.87 br s (2, 2, 2)
NAME: 19R-Hydroxy-20-epi-ibophyllidine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (40) C. Kan et al., <i>Tetrahedron Lett.</i>, 1980, 21, 3363. NOTES:	MI: 340 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$ NO: 60 3.30 td (12.5, 12.5, 5.5) 2.94 br dd (12.5, 6, 0.5) 1.64 dd (12.5, 5.5, 0.5) 2.05 m (12.5, 12.5, 6) 7.29 6.89 7.17 6.83 9.03 br s 2.90 m (8, 6) 1.10 d (7) 3.85 m (8, 7) 2.04 m (11.5, 6.5, 5.5, 0.5) 1.60 br dd (12.5, 6, 0.5) 2.1 m (12.5) 1.88 dd (14.5, 11.5) 2.76 dd (14.5, 5.5) 3.84 d (6.5) 3.75 s

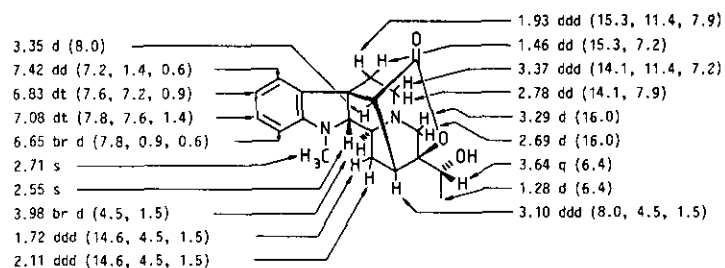
NAME: 19S-Hydroxy-20-epi-ibophyllidine
 FREQUENCY: 400 MHz SOLVENT: CDCl_3
 REFERENCE: (40) C. Kan et al., *Tetrahedron Lett.*, 1980, 21, 3363.
 NOTES:

MW: 340
 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$
 NO: 51



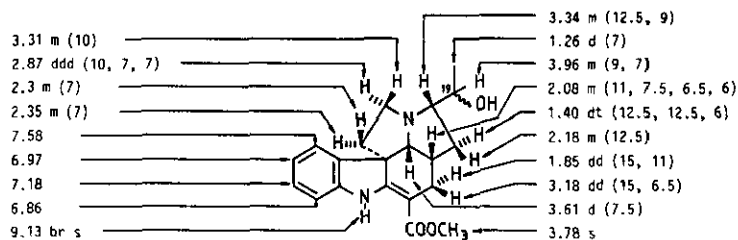
NAME: Raucubaine
 FREQUENCY: 200 MHz SOLVENT: CDCl_3
 REFERENCE: (41) P. Sierra et al., *Collect. Czech. Chem. Commun.*, 1982, 47, 2912.
 NOTES:

MW: 340
 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$
 NO: 63



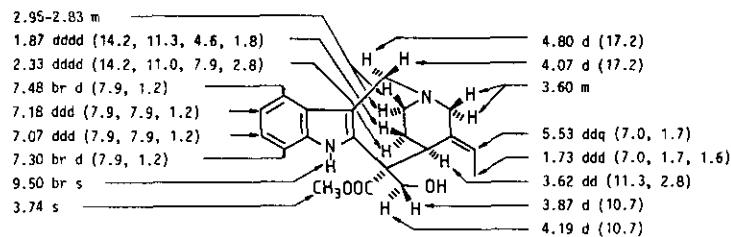
NAME: 19-Hydroxyibophyllidine
 FREQUENCY: 400 MHz SOLVENT: CDCl_3
 REFERENCE: (40) C. Kan et al., *Tetrahedron Lett.*, 1980, 21, 3363.
 NOTES:

MW: 340
 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$
 NO: 62

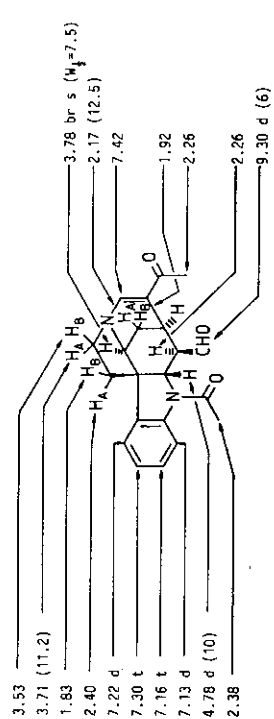
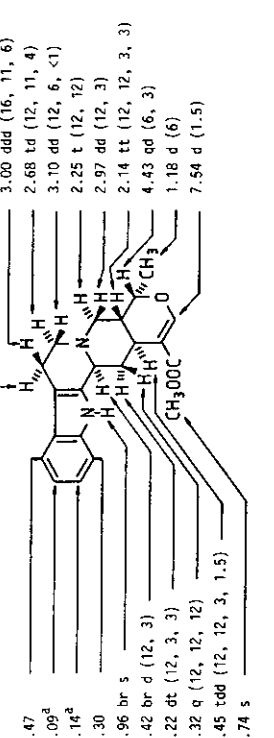
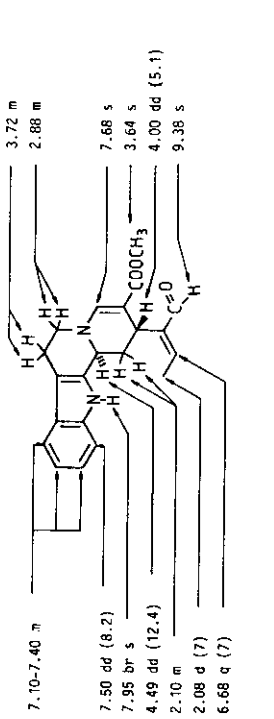
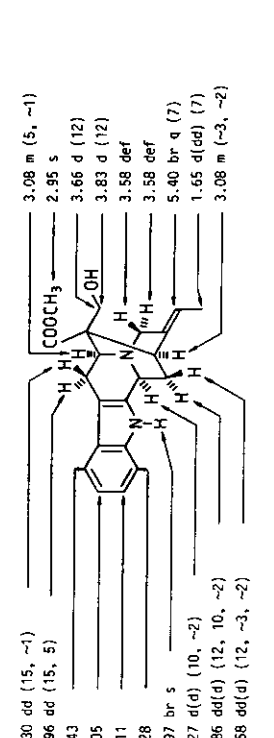


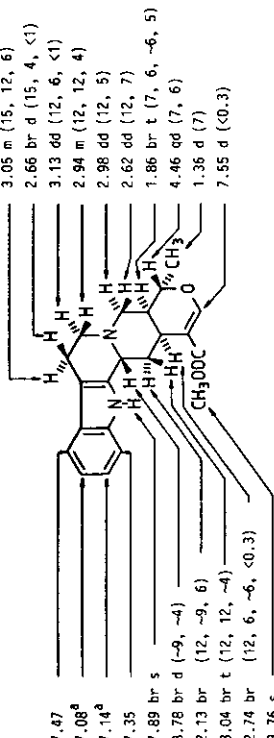
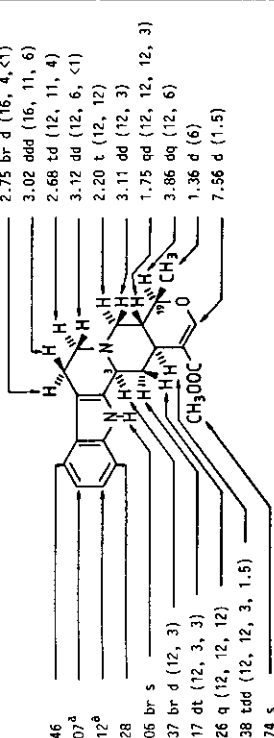
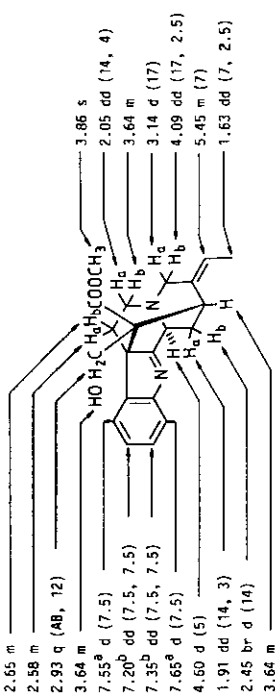
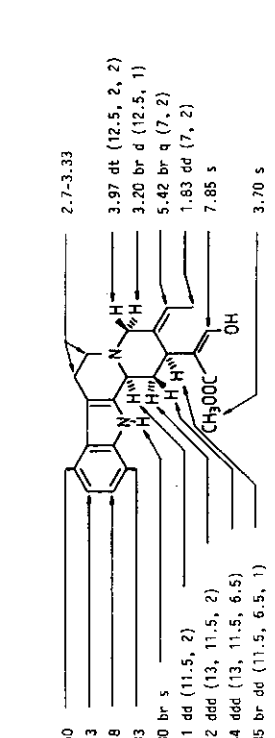
NAME: Vallesamine
 FREQUENCY: 300 MHz SOLVENT: $\text{CDCl}_3/\text{CD}_3\text{OD}$
 REFERENCE: (42) P. Perera et al., *Planta Med.*, 1984, 50, 251.
 NOTES:

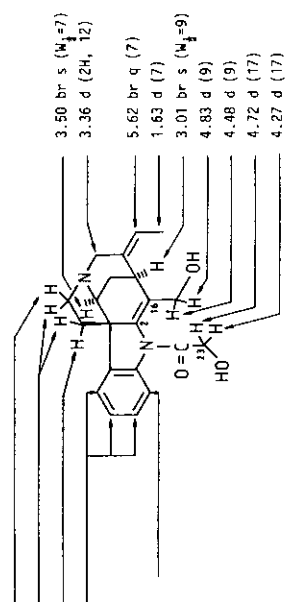
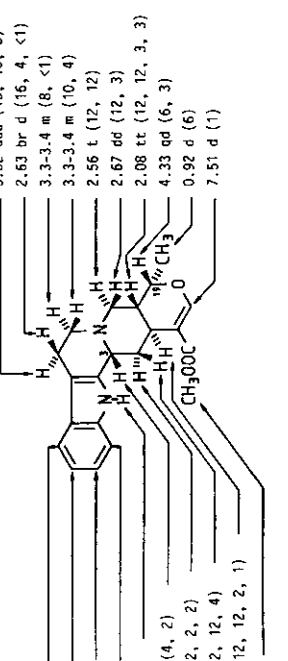
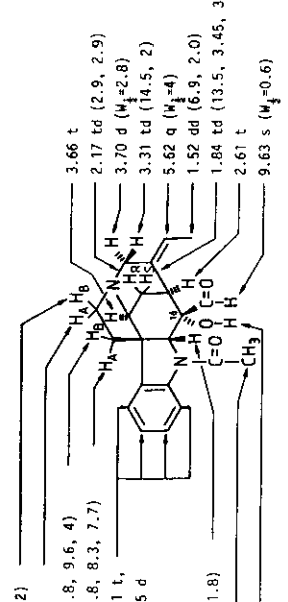
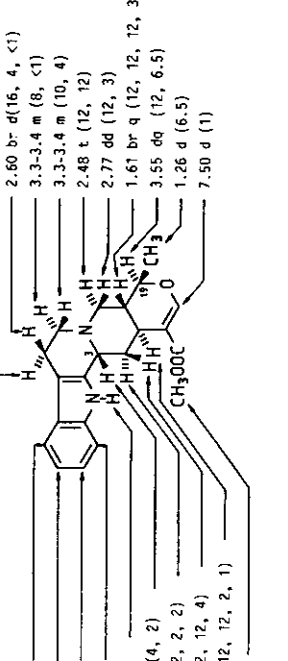
MW: 340
 MF: $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_3$
 NO: 64

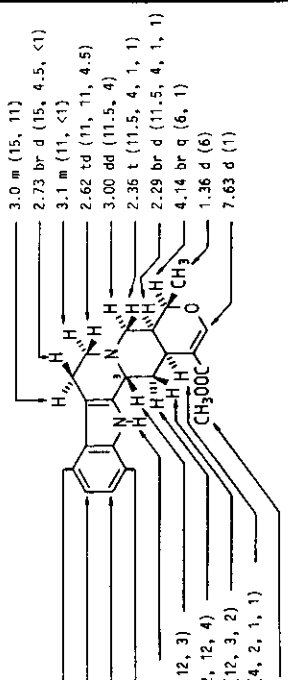
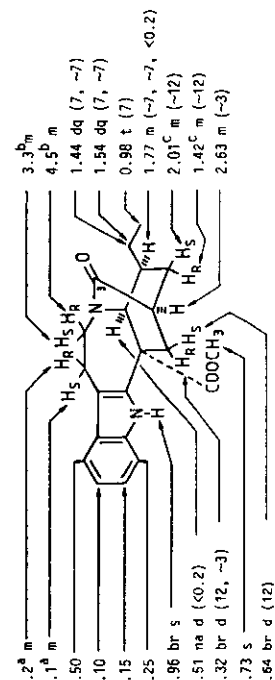


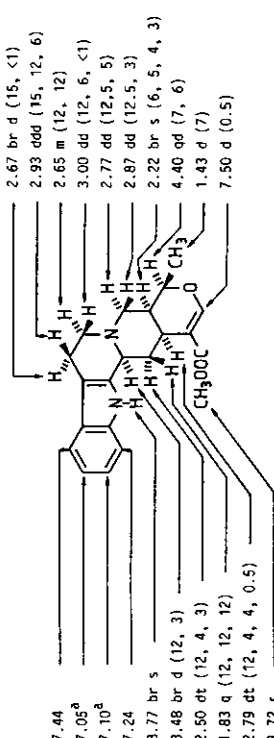
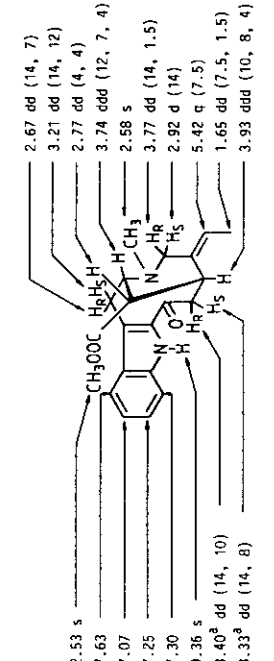
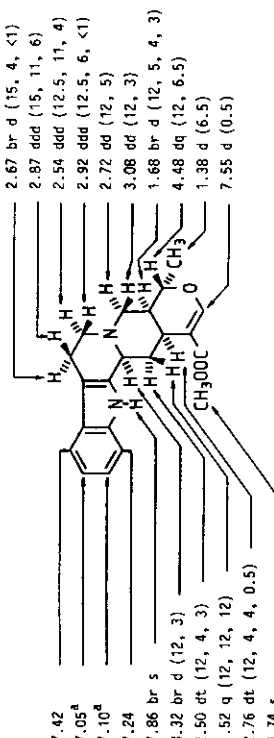
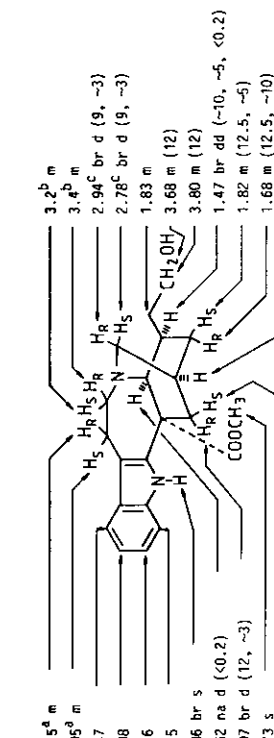
NAME: 14a-Hydroxygelsedine FREQUENCY: 360 MHz SOLVENT: CDCl₃ REFERENCE: (43) Y. Schun and G.A. Cordell, <i>J. Nat. Prod.</i>, 1985, 49, 788. NOTES:	NAME: Epicatechinamine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., <i>Acta Chem. Scand., Ser. B</i>, 1981, 35, 269. NOTES:
NAME: 14a-Hydroxygelsedine FREQUENCY: 360 MHz SOLVENT: CDCl₃ REFERENCE: (43) Y. Schun and G.A. Cordell, <i>J. Nat. Prod.</i>, 1985, 49, 788. NOTES:	NAME: Epicatechinamine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., <i>Acta Chem. Scand., Ser. B</i>, 1981, 35, 269. NOTES:
NAME: Cathenamine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., <i>Acta Chem. Scand., Ser. B</i>, 1981, 35, 269. NOTES:	NAME: Isovallesichotamine FREQUENCY: 90 MHz SOLVENT: CDCl₃ REFERENCE: (45) P.G. Waterman and S. Zhong, <i>Planta Med.</i>, 1982, 45, 28. NOTES:

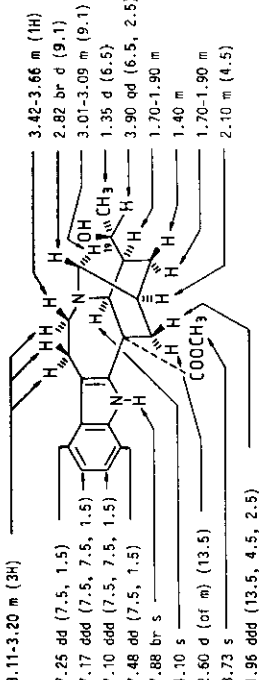
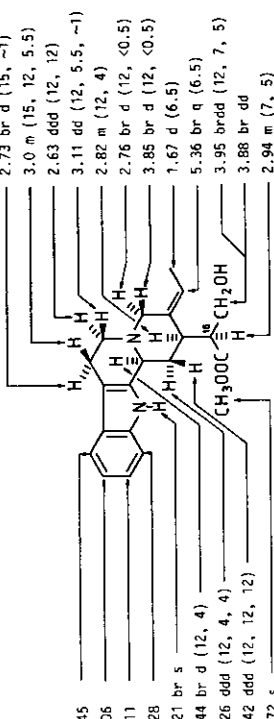
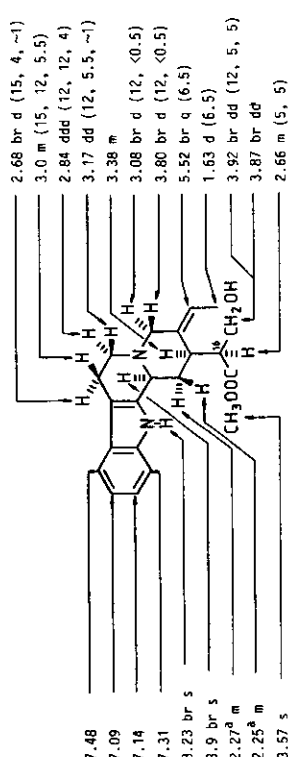
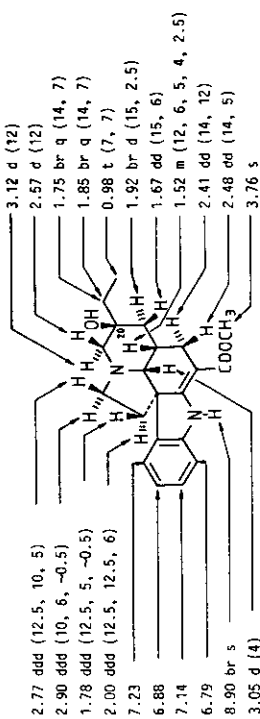
NAME: Strychnozairine FREQUENCY: 360 MHz REFERENCE: (46) M. Tits et al., <i>Phytochemistry</i>, 1985, 24, 205. NOTES: Rotamer b. The shift of one proton not given.	NAME: Ajmalicine FREQUENCY: 400 MHz REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1607. NOTES:
MW: 350 MF: $C_{21}H_{22}N_2O_3$ NO: 69  3.53 3.71 (11:2) 1.83 2.40 7.22 d 7.30 t 7.16 t 7.13 d 4.78 d (10) 2.38 3.78 br s ($M_f=7.5$) 2.17 (12.5) 7.42 1.92 2.26 2.26 9.30 d (6)	 7.47 7.09^a 7.14^a 7.30 7.96 br s 3.42 br d (12, 3) 3.22 ds (12, 3, 3) 1.32 q (12, 12, 12) 2.45 tdd (12, 12, 3, 1.5) 3.74 s 2.75 br d (16, 4, <1) 3.00 ddd (16, 11, 6) 2.68 td (12, 11, 4) 3.10 dd (12, 6, <1) 2.25 t (12, 12) 2.97 dd (12, 3) 2.14 tt (12, 12, 3, 3) 4.43 qd (6, 3) 1.18 d (6) 7.54 d (1.5)
NAME: Vallesiachotamine FREQUENCY: 90 MHz REFERENCE: (45) P.G. Waterman and S. Zheng, <i>Planta Med.</i>, 1982, 48, 28. NOTES:	NAME: Akuammidine FREQUENCY: 400 MHz REFERENCE: (46) M. Lounasmaa et al., <i>Planta Med.</i>, 1985, 519. NOTES: Recorded at 56°C.
MW: 350 MF: $C_{21}H_{22}N_2O_3$ NO: 70  7.10-7.40 m 7.50 dd (8.2) 7.95 br s 4.49 dd (12.4) 2.10 m 2.08 d (7) 6.68 q (7) 3.72 m 2.88 m 7.68 s 3.64 s 4.00 dd (5.1) 9.38 s	 3.30 dd (15, ~4) 2.96 dd (15, 5) 7.43 7.05 7.11 7.28 7.97 br s 4.27 d(d) (10, ~2) 1.86 dd(d) (12, 10, ~2) 2.68 dd(d) (12, ~3, ~2) 3.08 m (5, ~1) 2.95 s 3.66 d (12) 3.83 d (12) 3.58 def 3.58 def 5.40 br q (7) 1.65 ddd (7) 3.08 m (~3, ~2)

NAME: Akaumigine FREQUENCY: 400 MHz REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1607. NO: 73. NOTES: Recorded at 60°C.	NAME: 19-Epiplajmalicine FREQUENCY: 400 MHz REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1607. NO: 75. NOTES:
MM: 352 MF: $C_{21}H_{24}N_2O_3$  7.47 7.08^a 7.14^a 7.35 7.89 br s 7.78 br d (-9, -4) 2.73 br (12, -9, 6) 3.04 br t (12, 12, -4) 2.74 br (12, 6, -6, <0.3) 3.76 s 3.05 m (15, 12, 6) 2.66 br d (15, 4, <1) 3.13 dd (12, 6, <1) 2.94 m (12, 12, 4) 2.98 dd (12, 5) 2.62 dd (12, 7) 1.86 br t (7, 6, -6, 5) 4.46 dd (7, 6) 1.36 d (7) 7.55 d (<0.3)	MM: 352 MF: $C_{21}H_{24}N_2O_3$  7.46 7.07^a 7.12^a 7.28 8.06 br s 3.37 br d (12, 3) 3.17 dt (12, 3, 3) 1.26 q (12, 12, 12) 2.38 tdd (12, 12, 3, 1.5) 3.74 s 2.75 br d (16, 4, <1) 3.02 ddd (16, 11, 6) 2.68 td (12, 11, 4) 3.12 dd (12, 6, <1) 2.20 t (12, 12) 3.11 dd (12, 3) 1.75 qd (12, 12, 12, 3) 3.86 qd (12, 6) 1.36 d (6) 7.56 d (1-5)
NAME: Deacetylaikumiline FREQUENCY: 400 MHz REFERENCE: (31) F. Guérin et al., <i>J. Nat. Prod.</i>, 1983, 46, 144. NOTES: See also Ref. 52.	NAME: Geissoschizine FREQUENCY: 270 MHz REFERENCE: (48) G. Horle et al., <i>Planta Med.</i>, 1980, 48, 120. NOTES:
MM: 352 MF: $C_{21}H_{24}N_2O_3$  2.65 m 2.58 m 2.93 q (AB, 12) 3.64 m 7.55^a d (7.5) 7.20^b dd (7.5, 7.5) 7.35^b dd (7.5, 7.5) 7.65^a d (7.5) 4.60 d (5) 1.91 dd (14, 3) 2.45 br d (14) 3.64 m 3.86 s 2.05 dd (14, 4) 3.64 m 3.14 d (17) 4.09 dd (17, 2.5) 5.45 m (7) 1.63 dd (7, 2.5)	MM: 352 MF: $C_{21}H_{24}N_2O_3$ NO: 76  7.50 7.13 7.18 7.33 7.80 br s 4.51 dd (11.5, 2) 2.12 ddd (13, 11.5, 2) 2.64 ddd (13, 11.5, 6.5) 3.85 br dd (11.5, 6.5, 1) 2.7-3.33 3.97 dt (12.5, 2, 2) 3.20 br d (12.5, 1) 5.42 br q (7, 2) 1.83 dd (7, 2) 7.85 s 3.70 s

NAME: 23-Hydroxy-2,16-dehydrotretuline FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (14) G. Massiot et al., <i>Tetrahedron</i>, 1983, 39, 3645. NOTES: The shifts of four protons not given.	NAME: 3-Isoajmalicine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1607, NO: 79 NOTES:
3.12 m 2.83 m 2.45 m 7.20 m 8.32 d (8) 3.50 br s ($M_2=7$) 3.36 d (2H, 12) 5.62 br q (7) 1.63 d (7) 3.01 br s ($M_2=9$) 4.83 d (9) 4.48 d (9) 4.72 d (17) 4.27 d (17) 	7.48 7.11^a 7.17^a 7.40 8.35 br s 4.56 br s (4, 2) 3.21 dt (12, 2, 2) 1.70 td (12, 12, 4) 1.98 tdd (12, 12, 2, 1) 3.73 s 3.02 ddd (16, 10, 8) 2.63 br d (16, 4, <1) 3.3-3.4 m (8, <1) 3.3-3.4 m (10, 4) 2.56 t (12, 12) 2.67 dd (12, 3) 2.08 tt (12, 12, 3, 3) 4.33 dd (6, 3) 0.92 d (6) 7.51 d (1) 
NAME: 16-Hydroxyisoretulinal FREQUENCY: 360 MHz SOLVENT: CDCl_3 REFERENCE: (28) M. Tits et al., <i>Phytochemistry</i>, 1980, 19, 1531. NOTES:	NAME: 3-Iso-19-epi-ajmalicine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1607, NO: 80 NOTES: For reassignment of $\text{CH}_3\text{-C}(19)$, see Ref. 80.
2.91 q (12, 2) 3.20 (12, 2) 1.92 td (13.8, 9.6, 4) 2.51 td (13.8, 8.3, 7.7) 7.10 d, 7.11 t, 7.21 t, 7.25 d 4.82 s ($M_2=1.8$) 2.41 s 3.5 s, 3.66 t 2.17 td (2.9, 2.9) 3.70 d ($M_2=2.8$) 3.31 td (14.5, 2) 5.62 q ($M_2=4$) 1.52 dd (6.9, 2.0) 1.84 td (13.5, 3.45, 3.45) 2.61 t 9.63 s ($M_2=0.6$) 	7.46 7.09^a 7.15^a 7.37 8.18 br s 4.52 br s (4, 2) 3.11 dt (12, 2, 2) 1.59 td (12, 12, 4) 1.94 tdd (12, 12, 2, 1) 3.70 s 3.00 ddd (16, 10, 8) 2.60 br d (16, 4, <1) 3.3-3.4 m (8, <1) 3.3-3.4 m (10, 4) 2.48 t (12, 12) 2.77 dd (12, 3) 1.61 br q (12, 12, 12, 3) 3.55 dq (12, 6.5) 1.26 d (6.5) 7.50 d (1) 

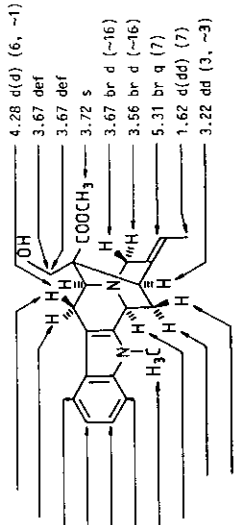
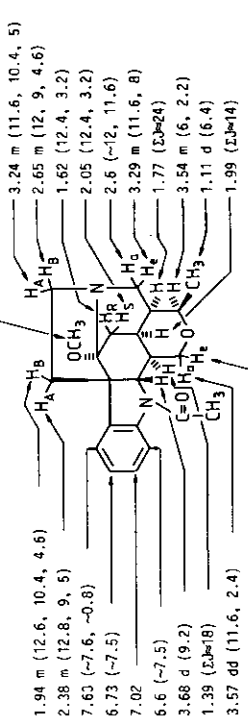
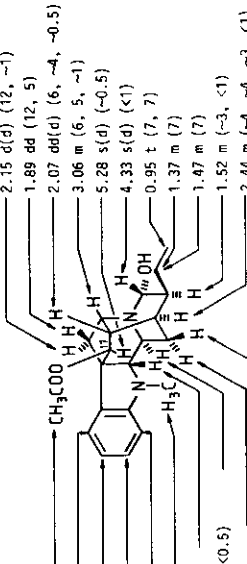
NAME: 3-Isoraunittidine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1607. NO: 81 NOTES:	NAME: Polynuridine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (16) M. Lounasmaa et al., <i>Planta Med.</i>, 1985, 519. NOTES:
 7.45 7.07^a 7.12^a 7.28 7.90 br s 3.12 br d (12, 3) 1.74 td (12, 4) 3.10 br d (12, 3, 2) 3.06 br s (4, 2, 1, 1) 3.75 s 3.0 m (15, 11) 2.73 br d (15, 4.5, <1) 3.1 m (11, <1) 2.62 td (11, 11, 4.5) 3.00 dd (11.5, 4) 2.36 t (11.5, 4, 1, 1) 2.29 br d (11.5, 4, 1, 1) 4.14 br q (6, 1) 1.36 d (6) 7.63 d (1)	2.98 d(d) (16, ~1) 3.12 dd (15, 6) 7.48 7.10 7.16 7.33 8.20 br s 4.09 dd (10, 4) 1.90 odd (14, 10, 3) 1.83 odd (14, 4, ~3) 4.32 d(d) (6, ~1) 3.58 d (12) 3.68 d (12) 3.72 s 3.64 br d (~16) 3.53 br d (~16) 5.26 br q (7) 1.59 d(dd) (7) 3.18 dd (3, ~3)
NAME: 3-Oxocoronaridine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (22) X.Z. Feng et al., <i>Planta Med.</i>, 1982, 48, 212. NOTES: For reassignments, see Ref. 81.	NAME: Quebrachidine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NOTES:
 3.2^a m 3.1^a m 7.50 7.10 7.15 7.25 7.96 br s 4.51 na d (<0.2) 2.32 br d (12, ~3) 3.73 s 2.64 br d (12) 3.3^b m 4.5^b m 1.44 dq (7, ~7) 1.54 dq (7, ~7) 0.98 t (7) 1.77 m (~7, ~7, <0.2) 2.01^c m (~12) 1.42^c m (~12) 2.63 m (~3)	7.16 6.74 7.05 6.72 3.67 d (5) 3.30 dd(d) (10, 5, ~1) 1.42 dd(d) (14, 10, ~2) 2.49 dd(d) (14, ~5, ~1) 1.65 d(d) (12, ~1) 2.55 dd (12, 5) 3.63 s 3.44 d(d) (5, ~1) 4.18 s 3.25 def 3.23 def 5.22 br q (7) 1.58 br d (7) 3.43 d(d) (~5, ~2)

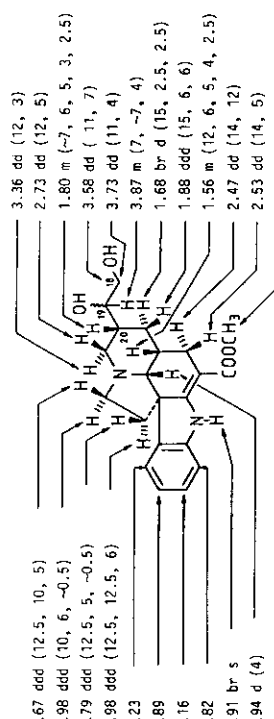
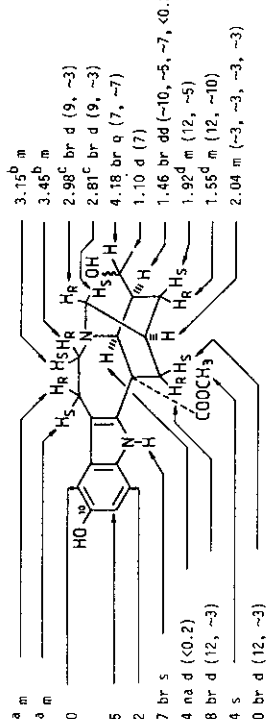
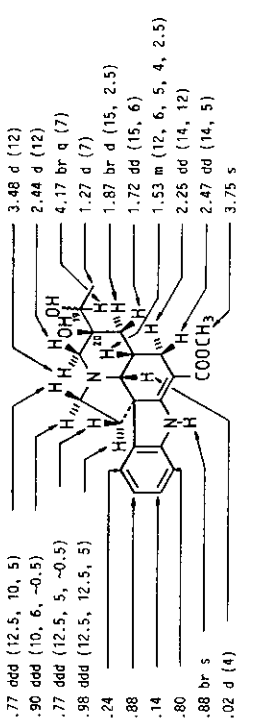
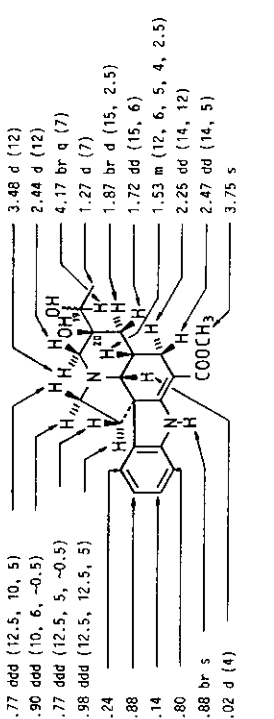
NAME: Rauniticine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1807. NOTES: Recorded at 60°C.	NAME: Vobasine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (49) X.-Z. Feng et al., <i>J. Nat. Prod.</i>, 1981, 44, 670. NOTES:
MM: 352 MF: C₂₁H₂₄N₂O₃ NO: 85  7.44 7.05^a 7.10^a 7.24 8.77 br s 3.48 br d (12, 3) 2.50 dt (12, 4, 3) 1.83 q (12, 12, 12) 2.79 dt (12, 4, 0.5) 3.72 s 2.67 br d (15, <1) 2.93 ddd (15, 12, 6) 2.65 m (12, 12) 3.00 dd (12, 6, <1) 2.77 dd (12.5, 5) 2.87 dd (12.5, 3) 2.22 br s (6, 5, 4, 3) 4.40 dd (7, 6) 1.43 d (7) 7.50 d (0.5)	MM: 352 MF: C₂₁H₂₄N₂O₃ NO: 85  2.53 s 7.63 7.07 7.25 7.30 9.36 s 3.40^a dd (14, 10) 3.33^a dd (14, 8) 2.67 dd (14, 7) 3.21 dd (14, 12) 2.77 dd (4, 4) 3.74 ddd (12, 7, 4) 2.58 s 3.77 dd (14, 1.5) 2.92 d (14) 5.42 q (7.5) 1.65 dd (7.5, 1.5) 3.93 ddd (10, 8, 4)
NAME: Tetrahydroalstonine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (47) M. Lounasmaa and S.-K. Kan, <i>Tetrahedron</i>, 1980, 36, 1807. NOTES:	NAME: Albifloranine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (37) C. Kan et al., <i>Planta Medica</i>, 1981, 41, 72. NOTES: For reassignment of aromatic protons, see Ref. 49.
MM: 352 MF: C₂₁H₂₄N₂O₃ NO: 86  7.42 7.05^a 7.10^a 7.24 7.86 br s 3.32 br d (12, 3) 2.50 dt (12, 4, 3) 1.52 q (12, 12, 12) 2.76 dt (12, 4, 0.5) 3.74 s 2.67 br d (15, 4, <1) 2.87 ddd (15, 11, 6) 2.54 ddd (12.5, 11, 4) 2.92 ddd (12.5, 6, <1) 2.72 dd (12, 5) 3.08 dd (12, 3) 1.68 br d (12, 5, 4, 3) 4.48 dq (12, 6.5) 1.38 d (6.5) 7.55 d (0.5)	MM: 354 MF: C₂₁H₂₆N₂O₃ NO: 88  3.15^a m 3.05^a m 7.47 7.08 7.16 7.25 7.86 br s 3.62 na d (<0.2) 1.97 br d (12, ~3) 3.73 s 2.60 br d (12, ~3) 3.2^b m 3.4^b m 2.94^c br d (9, ~3) 2.78^c br d (9, ~3) 1.83 m 3.68 m (12) 3.80 m (12) 1.47 br dd (~10, ~5, <0.2) 1.82 m (12.5, ~5) 1.68 m (12.5, ~10) 1.95 m (~3, ~3, ~3)

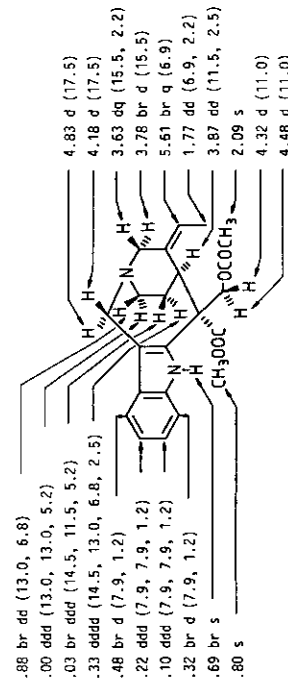
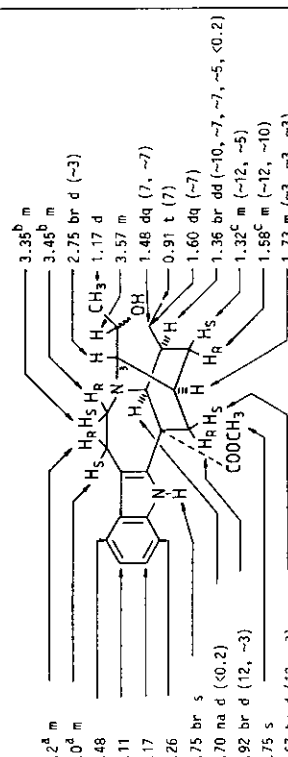
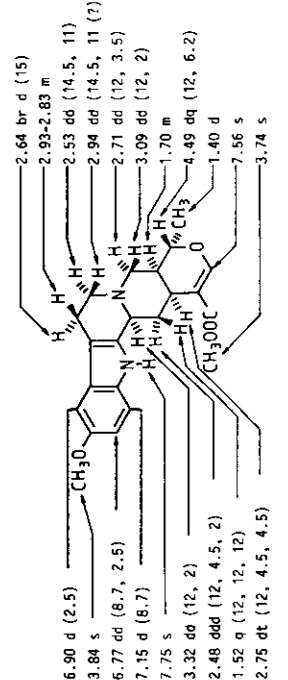
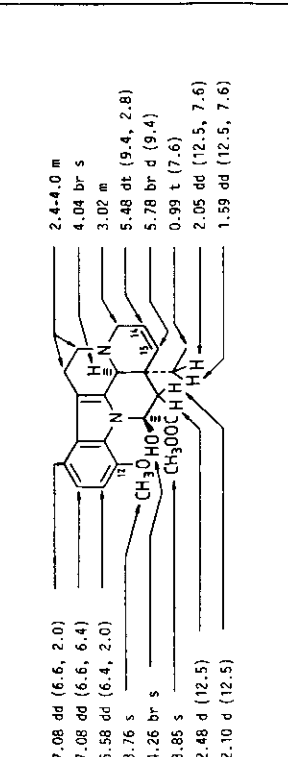
NAME: 19R-Ephedrine FREQUENCY: 300 MHz SOLVENT: CDCl₃ REFERENCE: (42) P. Perera et al., <i>Planta Med.</i>, 1984, 50, 251. NOTES:	MM: 354 MF: C₂₁H₂₆N₂O₃ NO: 89 
NAME: 16-Epi-Z-isositsirikine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., <i>Acta Chem. Scand.</i>, 1981, 35, 269. NOTES:	MM: 354 MF: C₂₁H₂₆N₂O₃ NO: 91 
NAME: 16-Epi-E-isositsirikine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., <i>Acta Chem. Scand.</i>, 1981, 35, 269. NOTES:	MM: 354 MF: C₂₁H₂₆N₂O₃ NO: 90 
NAME: (+)-20-Epipandoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (50) C. Kan et al., <i>Planta Med.</i>, 1981, 41, 195. NOTES:	MM: 354 MF: C₂₁H₂₆N₂O₃ NO: 92 

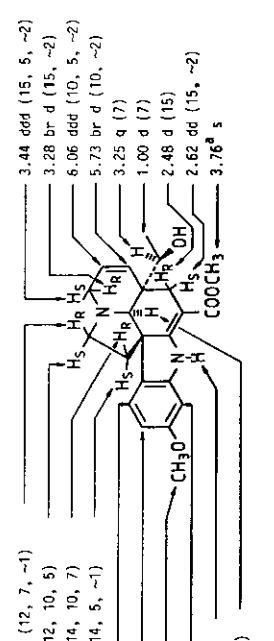
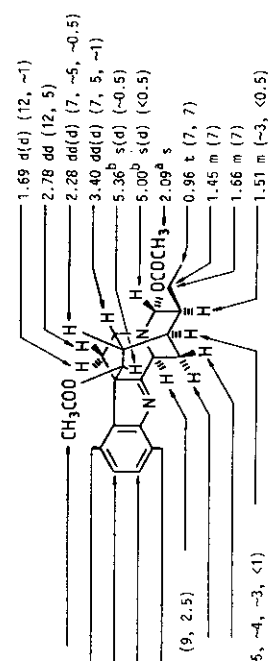
NAME: 16-Epitacamine FREQUENCY: 300 MHz SOLVENT: CDCl₃ REFERENCE: (18) T.A. van Beek et al., Tetrahedron, 1984, 40, 737. NO: 93 NOTES:	NAME: 3R-Hydroxycoronaridine FREQUENCY: 400 MHz SOLVENT: - REFERENCE: (51) L. Le Men-Olivier et al., Bull. Soc. Chim. Fr., 1985, 94. NOTES: The shift of the COOCH₃ group not given.	NAME: E-Isositsirikine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., Acta Chem. Scand., Ser. B, 1981, 35, 289. NO: 96 NOTES:
4.11 m 7.42 m 7.10 m 7.10 m 7.42 m 3.67 s 2.67 dd (14.9, 2.9) 2.22 dd (14.9, 4.2) 2.08 m 2.90 m 2.48 m 3.02 m 3.07 m 2.06 dd (10.9, 10.9) 2.43 br d (10.9) 0.77 t (7.3) 0.98 m 1.30 m 1.31 m 0.69 ddd (12.7, 12.7, 12.7)	3.55 dt (13, 5) 3.20 dt (13, 7) 3.1 m (2H) 7.5^a (8) 7.16^b (8) 7.1^b (8) 7.27^a (8) 7.85 s 3.8 s 2.75 dd (13, 1) 1.85 ddd (13, 3, 1) 4.10 br d (1.5) 1.62 m 1.5 m 0.9 t (7) 1.3 m 1.5 m 2.0 br s (M_n=10)	7.48 7.10 7.17 7.38 8.67 br s 4.31 br s 2.26^a m 2.22^a m 3.67 s 2.65 br d (15, 4, ~1) 3.0 m (15, 12, 5.5) 3.15 ddd (12, 12, 4) 3.27 dd (12, 5.5, ~1) 3.10 m 3.54 br d (12, <0.5) 2.93 br d (12, <0.5) 5.64 br q (6.5) 1.67 d (6.5) 3.55 br dd (12, 7, 5) 3.50 br dd 2.52 m (7, 5)
NAME: Heyneanine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (37) C. Kan et al., Planta Med., 1981, 41, 72. NOTES: For reassignment of aromatic protons, see Ref. 49.	NAME: 354 MF: C₂₁H₂₆N₂O₃ NO: 94	NAME: 354 MF: C₂₁H₂₆N₂O₃ NO: 96
3.1^a m 3.05^a m 7.48 7.10 7.18 7.27 7.83 br s 3.86 na d (<0.2) 1.98 br d (12, ~3) 3.73 s 2.60 br d (12, ~3) 3.15^b m 3.45^b m 2.98^c br d (9, ~3) 2.81^c br d (9, ~3) 1.10 d (7) 4.17 br q (7, ~7) 1.47 br dd (~10, ~7, ~5, <0.2) 1.92 br dd (12.5, ~5) 1.56 br dd (12.5, ~10) 2.03 m (~3, ~3, ~3, ~3)		

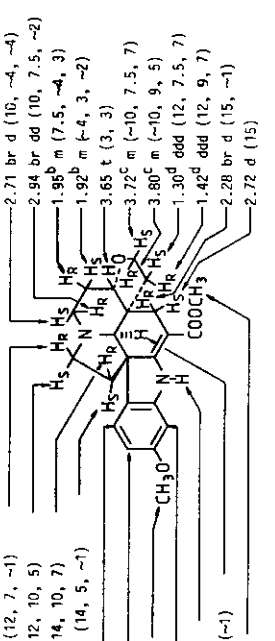
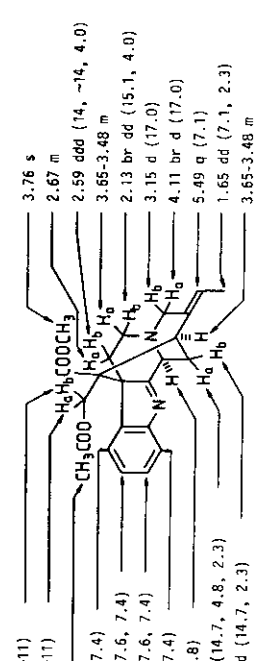
NAME: Z-Isositsirikine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (44) C. Kan et al., Acta Chem. Scand., Ser. B, 1981, 35, 269, NO: 97 NOTES:	NAME: Raucubainine FREQUENCY: 200 MHz SOLVENT: REFERENCE: (41) P. Sierra et al., Collect. Czech. Chem. Commun. NO: 99 1982, 47, 2912. NOTES: Also known as quaternoxine, see Ref. 82.
7.48 7.10 7.16 7.33 7.91 br s 3.64 br d (12, 4) 2.17 ddd (12, 4, 4) 1.72 ddd (12, 12, 12) 3.76 s 2.76 br d (15, ~1) 3.0 m (15, 12, 5.5) 2.74 m (12, 12) 3.19 dd (12, 5.5, ~1) 2.66 m (12, 4) 2.91 br d (12, <0.5) 3.82 br d (12, <0.5) 1.74 d (6.5) 5.48 br q (6.5) 3.94 br dd (12, 7, 5) 3.85 br dd 3.01 m (7, 5)	2.97 d (3.9) 7.05 dd (7.4, 1.1, 0.5) 6.72 dt (7.6, 7.4, 0.8) 7.12 dt (7.8, 7.6, 1.1) 6.63 br d (7.8, 0.8, 0.5) 2.70 s 2.51 s 4.12 br d (4.9, 1.5) 1.69 ddd (14.8, 4.5, 1.5) 2.70 (14.8, 4.9) 2.65 (14.5, 13.4, 6.5) 1.63 dd (14.5, 4.6) 3.76 s 3.83 ddd (13.4, 13.4, 4.6) 2.52 dd (13.4, 6.5) 3.49 d (15.7) 2.28 d (15.7) 3.06 q (5.8) 1.28 d (5.8) 2.70 (3.9)
NAME: (+)-Pandoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (50) C. Kan et al., Planta Med., 1981, 41, 195. NOTES:	NAME: Tacamine FREQUENCY: 300 MHz SOLVENT: CDCl₃ REFERENCE: (18) T. A. van Beek et al., Tetrahedron, 1980, 40, 737. NOTES: See also Ref. 83.
2.79 ddd (12.5, 10, 5) 2.95 ddd (10, 6, ~0.5) 1.81 ddd (12.5, 5, ~0.5) 2.06 ddd (12.5, 12.5, 6) 7.23 6.89 7.16 6.83 8.94 br s 2.89 d (4) 2.98 d (12) 2.57 d (12) 1.47 br q (14, 7) 1.54 br q (14, 7) 0.96 t (7, 7) 1.87 br d (15, 2.5) 1.58 dd (15, 6) 1.52 m (12, 6, 5, 4, 2.5) 2.59^a m (~14, 12) 2.61^a m (~14, 5) 3.77 s	4.35 ddd (5.8, 2.3, 1.9, <0.5) 7.12 m 7.12 m 7.12 m 7.48 m 3.83 s at 500 MHz: br s at 4.55 2.82 dd (14.3, 4.2) 2.79 dd (14.3, 3.1) 2.40 dddd (12.7, 5.8, 4.2, 4.0, 3.1) 3.00 dddd (16.3, 11.2, 6.5, 2.3) 2.59 dddd (16.3, 5.5, 1.9, 0.6) 3.34 ddd (14.0, 6.5, 0.6) 3.43 ddd (14.0, 11.2, 5.5) 2.15 dd (10.9, 10.7) 2.66 ddd (10.9, 3.5, 1.6) 0.96 t (7.3) 1.20 ddd (~14, 7.3, ~6.5) 1.48 dddd (12.6, 10.7, ~6.5, ~6.5, 3.5, 3.0) 1.67 dddd (13.2, 4.0, 3.0, 1.6, <0.5) 1.14 ddd (13.2, 12.7, 12.6)

NAME: Voacalotine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (16) M. Lounasmaa et al., <i>Planta Med.</i>, 1985, 519. NOTES:	NAME: N₃-Acetyl-0-methylstrychnopendine FREQUENCY: 360 MHz SOLVENT: CDCl₃ REFERENCE: (55) M. Caprasse and L. Angenot, <i>Planta Med.</i>, 1981, 42, 364. NOTES: The shift of the N-acetyl group not given.	NAME: 10-Hydroxydeacetylakuammine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (31) F. Guérin et al., <i>J. Nat. Prod.</i>, 1983, 46, 144. NOTES:
NAME: 17-O-Acetylajmaline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NOTES: Recorded at 52°C.	NAME: 10-Hydroxydeacetylakuammine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (31) F. Guérin et al., <i>J. Nat. Prod.</i>, 1983, 46, 144. NOTES:	NAME: 10-Hydroxydeacetylakuammine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (31) F. Guérin et al., <i>J. Nat. Prod.</i>, 1983, 46, 144. NOTES:
2.95 d(d) (16, ~1) 3.11 dd (16, 6) 7.49 7.09 7.19 7.30 3.61 s 4.15 dd (10, 4) 1.97 ddd (14, 10, 3) 1.79 ddd (14, 4, ~3) 	1.94 m (12.6, 10.4, 4.6) 2.38 m (12.8, 9, 5) 7.63 (~7.6, ~0.8) 6.73 (~7.5) 7.02 6.6 (~7.5) 3.68 d (9.2) 1.39 (ΣJ=18) 3.57 dd (11.6, 2.4) 3.91 br d (11.6, W₂=3) 	2.19 s 7.26 6.78 7.15 6.66 2.78 s 2.72 s(d) (<0.5) 3.65 d(dd) (10, <1, <0.5) 1.85 m (14, 10, <1) 1.62 ddd (14, ~4, <1) 

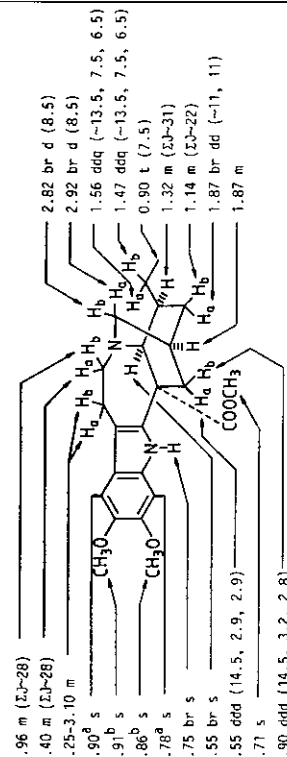
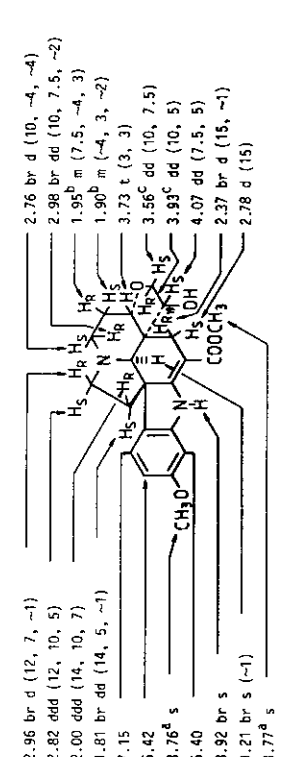
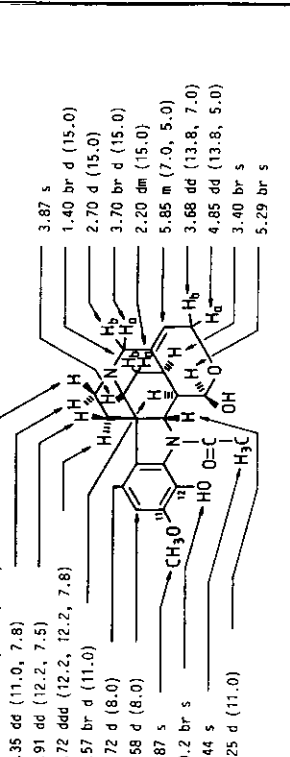
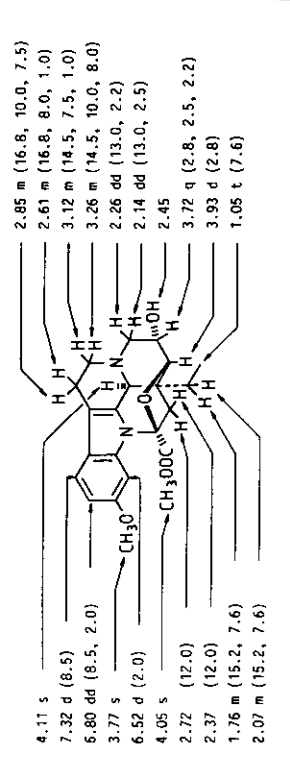
NAME: 20R-18,19-Dihydroxypseudovincadifformine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (50) C. Kan et al., <i>Planta Med.</i>, 1981, 41, 195. NOTES:	MM: 370 MF: $\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 109  2.67 ddd (12.5, 10, 5) 2.98 ddd (10, 6, -0.5) 1.79 ddd (12.5, 5, -0.5) 1.98 ddd (12.5, 12.5, 6) 7.23 6.89 7.16 6.82 8.91 br s 2.94 d (4) 3.36 dd (12, 3) 2.73 dd (12, 5) 1.80 m (-7, 6, 5, 3, 2.5) 3.58 dd (11, 7) 3.73 dd (11, 4) 3.87 m (7, -7, 4) 1.68 br d (15, 2.5, 2.5) 1.88 ddd (15, 6, 6) 1.56 m (12, 6, 5, 4, 2.5) 2.47 dd (14, 12) 2.53 dd (14, 5) 3.77 s
NAME: 10-Hydroxyheynanine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (22) X.Z. Feng et al., <i>Planta Med.</i>, 1982, 44, 212. NOTES:	MM: 370 MF: $\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 111  3.1^a m 3.0^b m 6.90 6.75 7.12 7.67 br s 3.84 na d (<0.2) 1.98 br d (12, -3) 3.74 s 2.60 br d (12, -3) 3.15^b m 3.45^b m 2.98^c br d (9, -3) 2.81^c br d (9, -3) 4.18 br q (7, -7) 1.10 d (7) 1.46 br dd (-10, -5, -7, <0.2) 1.92^d m (12, -5) 1.55^d m (12, -10) 2.04 m (-3, -3, -3)
NAME: 19-Hydroxytacamine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (18) T.A. van Beek et al., <i>Tetrahedron</i>, 1984, 40, 737. NOTES:	MM: 370 MF: $\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 112  4.40 m 7.13 m 7.13 m 7.13 m 7.49 m 3.84 s 2.65 dd (14.3, 4.0) 2.21 dd (14.3, 3.1) 2.46 m 3.02 m 2.63 m 3.37 m 3.46 m 2.31 dd (11.0, 11.0) 2.99 br d (11.0) 1.16 d (6.3) 3.44 dd (6.6, 6.3) ~1.7 m 1.62 br d (13.0) 1.29 ddd (13.0, 13.0, 13.0)
NAME: 19-Hydroxy-20-epitandoline FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (50) C. Kan et al., <i>Planta Med.</i>, 1981, 41, 195. NOTES:	MM: 370 MF: $\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 110  2.77 ddd (12.5, 10, 5) 2.90 ddd (10, 6, -0.5) 1.77 ddd (12.5, 5, -0.5) 1.98 ddd (12.5, 12.5, 5) 7.24 6.88 7.14 6.80 8.88 br s 3.02 d (4) 3.48 d (12) 2.44 d (12) 4.17 br q (7) 1.27 d (7) 1.87 br d (15, 2.5) 1.72 dd (15, 6) 1.53 m (12, 6, 5, 4, 2.5) 2.25 dd (14, 12) 2.47 dd (14, 5) 3.75 s

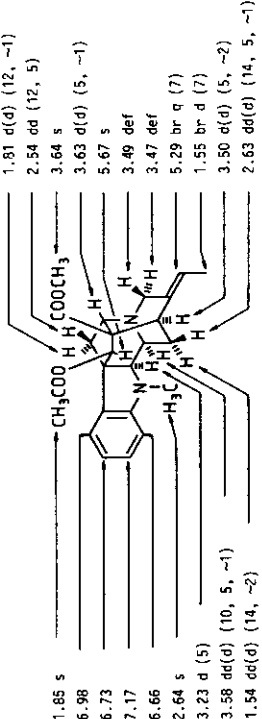
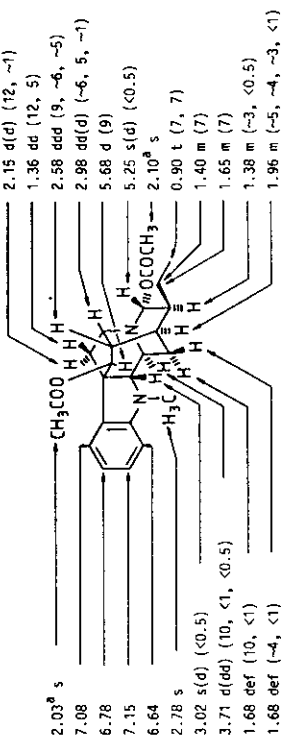
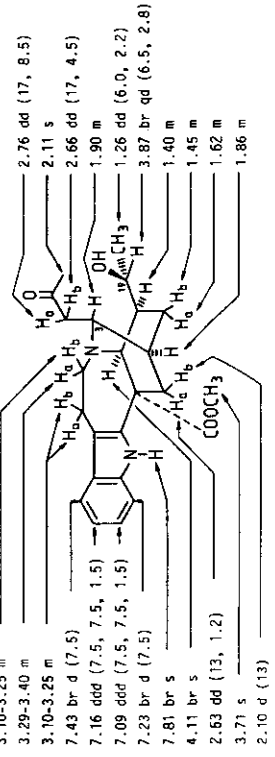
NAME: 0-Acetylvallesamine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (42) P. Perera et al., <i>Planta Med.</i>, 1984, 50, 251. NOTES:	MM: 382 MF: $\text{C}_{22}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 113  2.88 br dd (13.0, 6.8) 3.00 ddd (13.0, 13.0, 5.2) 2.03 br ddd (14.5, 11.5, 5.2) 2.33 ddd (14.5, 13.0, 6.8, 2.5) 7.48 br d (7.9, 1.2) 7.22 ddd (7.9, 7.9, 1.2) 7.10 ddd (7.9, 7.9, 1.2) 7.32 br d (7.9, 1.2) 8.69 br s 3.80 s 4.83 d (17.5) 4.18 d (17.5) 3.63 dq (15.5, 2.2) 3.78 br d (15.5) 5.61 br q (6.9) 1.77 dd (6.9, 2.2) 3.87 dd (11.5, 2.5) 2.09 s 4.32 d (11.0) 4.48 d (11.0)
NAME: 3-(8-Hydroxyethyl)-coronaridine FREQUENCY: 400 MHz SOLVENT: CDCl_3 REFERENCE: (22) X.Z. Feng et al., <i>Planta Med.</i>, 1982, 44, 212. NOTES:	MM: 382 MF: $\text{C}_{23}\text{H}_{30}\text{O}_3$ NO: 115  3.2^a m 3.0^d m 7.48 7.11 7.17 7.26 7.75 br s 3.70 na d (<0.2) 1.92 br d (12, -3) 3.75 s 2.67 br d (12, -3) 3.35^b m 3.45^b m 2.75 br d (~3) 1.17 d 3.57 m 1.48 dq (7, -7) 0.91 t (7) 1.60 dq (~7) 1.36 br dd (~10, -7, -5, <0.2) 1.32^c m (~12, -5) 1.58^c m (~12, -10) 1.73 m (~3, -3, -3)
NAME: Aricine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (56) R. Verpoorte et al., <i>Planta Med.</i>, 1983, 49, 283. NOTES:	MM: 382 MF: $\text{C}_{22}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 114  6.90 d (2.5) 3.84 s 6.77 dd (8.7, 2.5) 7.15 d (8.7) 7.75 s 3.32 dd (12, 2) 2.48 ddd (12, 4.5, 2) 1.52 q (12, 12) 2.75 dt (12, 4.5, 4.5) 2.64 br d (15) 2.93-2.83 m 2.53 dd (14.5, 11) 2.94 dd (14.5, 11 (21)) 2.71 dd (12, 3.5) 3.09 dd (12, 2) 1.70 m 4.49 dq (12, 6.2) 1.40 d 7.56 s 3.74 s
NAME: 12-Methoxy-14,15-dehydroincarnine FREQUENCY: 100 MHz SOLVENT: CDCl_3 REFERENCE: (57) T.A. van Beek et al., <i>Planta Med.</i>, 1983, 49, 83. NOTES: One of the chemical shifts given for C(9)H and C(10)H seems to be erroneous.	MM: 382 MF: $\text{C}_{22}\text{H}_{26}\text{N}_2\text{O}_4$ NO: 116  7.08 dd (6.6, 2.0) 7.08 dd (6.6, 6.4) 6.58 dd (6.4, 2.0) 3.76 s 4.26 br s 3.85 s 2.48 d (12.5) 2.10 d (12.5) 2.4-4.0 m 4.04 br s 3.02 m 5.48 dt (9.4, 2.8) 5.78 br d (9.4) 0.99 t (7.6) 2.05 dd (12.5, 7.6) 1.59 dd (12.5, 7.6)

NAME: Vandrikidine FREQUENCY: 400 MHz REFERENCE: (53) M. Lounasmaa and S.-K. Kan, <i>Acta Chem. Scand., Ser. B</i> , 1980, 34 , 379. NOTES: 19R.	NAME: Acetyldihydrovomilinenine FREQUENCY: 400 MHz REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i> , 1985, 23 , 1503. NO: 119. NOTES:
NAME: 382 MF: $C_{22}H_{26}N_2O_4$ NO: 117 SOLVENT: $CDCl_3$	NAME: 394 MF: $C_{23}H_{26}N_2O_4$ NO: 120 SOLVENT: $CDCl_3$
3.03 br dd (12, 7, -1) 2.76 ddd (12, 10, 5) 2.06 ddd (14, 10, 7) 1.82 ddd (14, 5, -1) 7.18 6.40 3.75^a s 6.42 8.92 br s 3.30 d (-2)  3.44 ddd (15, 5, -2) 3.28 br d (15, -2) 5.06 ddd (10, 5, -2) 5.73 br d (10, -2) 3.25 q (7) 1.00 d (7) 2.48 d (15) 2.62 dd (15, -2) 3.76^a s	2.15^a s 7.61 7.39 7.21 7.47 4.26 d(d) (9, 2.5) 1.82 def 1.82 def 2.49 m (-5, -4, -3, <1) 1.69 d(d) (12, -1) 2.78 dd (12, 5) 2.28 dd(d) (7, -5, -0.5) 3.40 dd(d) (7, 5, -1) 5.36^b s(d) (-0.5) 5.00^b s(d) (-0.5) 2.09^a s 0.96 t (7, 7) 1.45 m (7) 1.66 m (7) 1.51 m (-3, <0.5) 

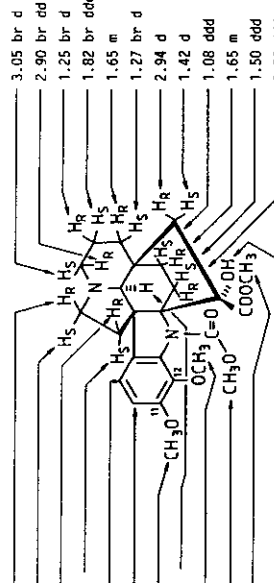
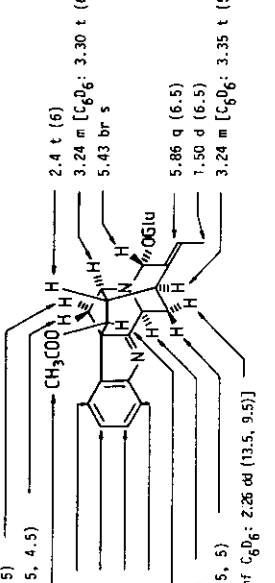
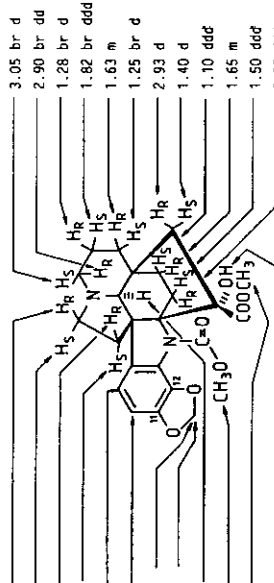
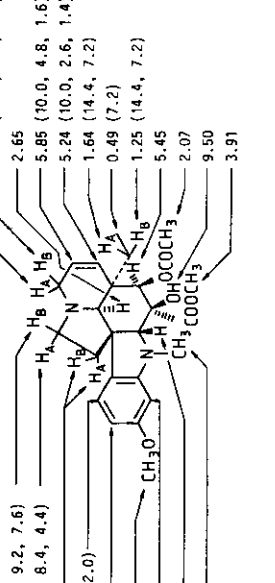
NAME: Vandrikine FREQUENCY: 400 MHz REFERENCE: (53) M. Lounasmaa and S.-K. Kan, <i>Acta Chem. Scand., Ser. B</i> , 1980, 34 , 379. NOTES:	NAME: Akumilinenine FREQUENCY: 300 MHz REFERENCE: (52) T.A. van Beek et al., <i>J. Nat. Prod.</i> , 1985, 48 , 400. NO: 120. NOTES:
NAME: 382 MF: $C_{22}H_{26}N_2O_4$ NO: 118 SOLVENT: $CDCl_3$	NAME: 394 MF: $C_{23}H_{26}N_2O_4$ NO: 120 SOLVENT: $CDCl_3$
2.93 br d (12, 7, -1) 2.64 ddd (12, 10, 5) 2.00 ddd (14, 10, 7) 1.72 br dd (14, 5, -1) 7.10 6.39 3.75^a s 6.40 8.86 br s 2.77 br s (-1) 3.76^a s  2.71 br d (10, -4, -4) 2.94 br dd (10, 7.5, -2) 1.95^b m (7.5, -4, 3) 1.92^b m (-4, 3, -2) 3.65 t (3, 3) 3.72^c m (-10, 7.5, 7) 3.80^c m (-10, 9, 5) 1.30 ddd (12, 7.5, 7) 1.42^d ddd (12, 9, 7) 2.28 br d (15, -1) 2.72 d (15)	3.51 d (-11) 3.61 d (-11) 1.58 s 7.66^a d (7.4) 7.30^b t (7.6, 7.4) 7.16^b t (7.6, 7.4) 7.59^a d (7.4) 4.63 d (4.8) 2.48 ddd (14.7, 4.8, 2.3) 1.91 br dd (14.7, 2.3) 3.76 s 2.67 m 2.59 ddd (14, -14, 4.0) 3.65-3.48 m 2.13 br dd (15.1, 4.0) 3.15 d (17.0) 4.11 br d (17.0) 5.49 q (7.1) 1.65 dd (7.1, 2.3) 3.65-3.48 m 

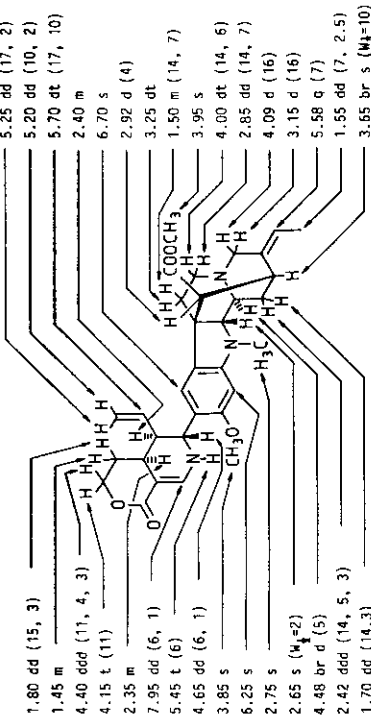
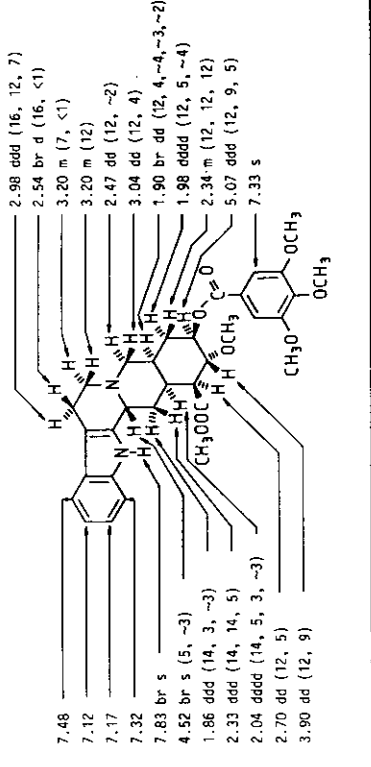
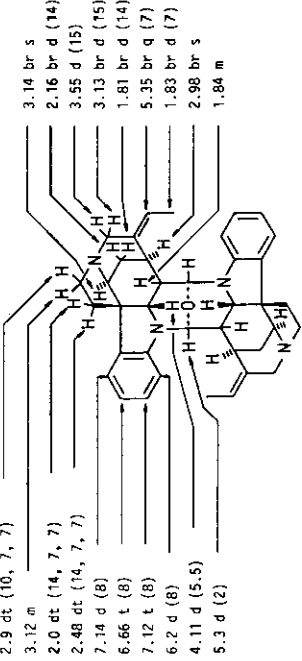
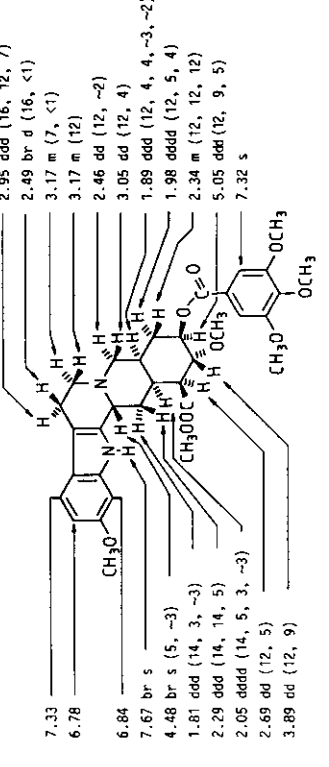
NAME: Brucine FREQUENCY: 360 MHz SOLVENT: CDCl₃ REFERENCE: (58) M.A. Bernstein and L.O. Hatl, Can. J. Chem., 1985, 63, 483. NOTES: The shift of the olefinic proton not given.	MM: 394 MF: C₂₃H₂₆N₂O₄ NO: 121 1.9 (~12.0) 1.8 (~12.0) 1.46 (14.2, 2.1, 1.0) 1.26 (3.3, 3.2) 6.66 3.65 3.89 7.80 3.83 (10.5) 3.09 (17.4, 8.5) 2.64 (17.4, 3.3) 3.9 2.83 3.15 2.34 (14.2, ~4.9) 3.68 (14.8, 1.6) 2.70 (14.8) 3.14 (4.0, 3.2, 1.0) 4.13 (13.8, 6.9) 4.05 (13.8, 6.3) 4.27 (3.3)
NAME: Difforleminine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (59) J. Garnier and J. Mahuteau, Tetrahedron Lett., 1985, 26, 1513. NOTES: Superscripts o and * denote interchangeable systems.	MM: 396 MF: C₂₂H₂₄N₂O₅ NO: 123 2.73 s 7.75 dd (7) 7.18 m (7) 7.37 m 7.37 m 9.05 s 9.67^a t (12, 12) 9.08 dd (12, 4.5) 9.92^a dd (12, 4.5) 4.07 dd (15, 9) 3.25 dd (15, 6) 3.50 dd (9, 6) 3.73 d (9) 3.86 d (9) 2.38 br s 3.63 s 3.15 q (6) 1.61 d (6)
NAME: Diacetylsarpagine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (16) M. Lounasmaa et al., Planta Med., 1985, 519. NOTES:	MM: 394 MF: C₂₃H₂₆N₂O₄ NO: 122 2.55 dd (15, ~1) 3.00 dd (15, 5) 7.15 2.01^a s 6.78 7.06 8.47 br s 3.98 d (10, ~2) 1.92 dd(d) (12, 10, ~3) 1.64 dd(d) (12, ~3, ~2) 2.74 m (5, ~2, ~1) 1.94 br dd (~8, ~8, ~3, ~2) 3.89 dd (~8) 3.99 dd (~8) 2.28^a s 3.51 def 3.51 5.43 br q (7) 1.56 d(ddd) (7) 2.72 m (~3, ~3, ~3)
NAME: 10-Hydroxygeissoschizol diacetate FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (22) X.Z. Feng et al., Planta Med., 1982, 44, 212. NOTES:	MM: 396 MF: C₂₃H₂₈N₂O₄ NO: 124 7.16 2.03^a s 6.86 7.28 8.07 br s 4.22 br s 2.27^b m 2.04^b m 2.85 m 1.56 m (7, 5) 2.56 br d (15, ~4, ~1) 3.05 m (15, 12, ~5) 3.06^c ddd (12, ~12, ~4) 3.23^c m (~12, ~5, ~1) 3.57 br d (12, <0.5) 2.95 br d (12, <0.5) 5.54 br q (6.5, <0.5, <0.5) 1.63 d(d) (6.5) 2.33^a s 3.97 br dd (7) 3.93 br dd (5)

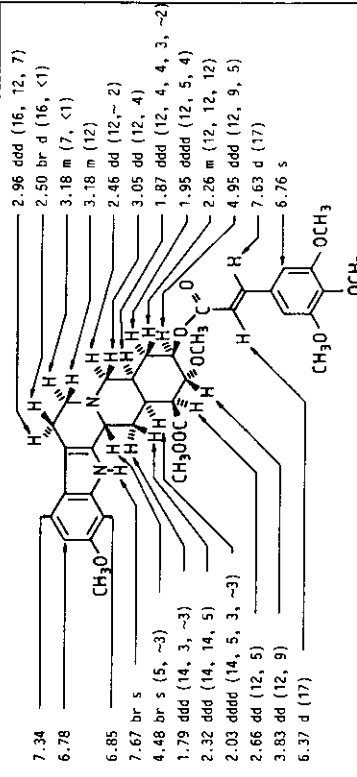
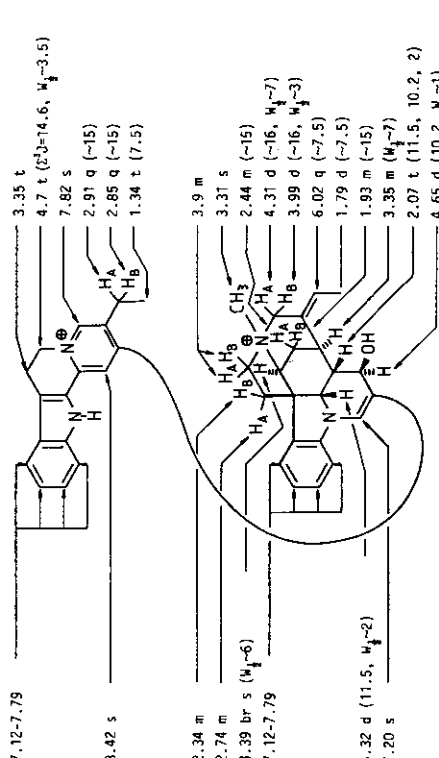
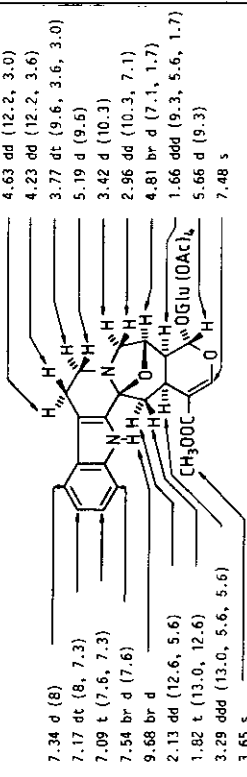
NAME: Conopharyngine FREQUENCY: 300 MHz SOLVENT: CDCl₃ REFERENCE: (52) T.A. van Beek et al., <i>J. Nat. Prod.</i>, 1985, 48, 400. NO: 125 NOTES:	NAME: 398 MF: C₂₃H₃₀N₂O₄ NO: 125  2.96 m (ΣJ=28) 3.40 m (ΣJ=28) 3.25-3.10 m 6.90^s s 3.91^s s 3.86^s s 6.78^s s 7.75 br s 3.55 br s 2.55 ddd (14.5, 2.9, 2.9) 3.71 s 1.90 ddd (14.5, 3.2, 2.8) 2.82 br d (8.5) 2.92 br d (8.5) 1.56 ddd (~13.5, 7.5, 6.5) 1.47 ddd (~13.5, 7.5, 6.5) 0.90 t (7.5) 1.32 m (ΣJ=31) 1.14 m (ΣJ=22) 1.87 br dd (~11, 11) 1.87 m
NAME: 19-Hydroxyvindikine FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (53) M. Lounasmaa and S.-K. Kan, <i>Acta Chem. Scand.</i>, Ser. B, 1980, 34, 379. NOTES:	NAME: 398 MF: C₂₂H₂₆N₂O₅ NO: 126  2.96 br d (12, 7, ~1) 2.82 ddd (12, 10, 5) 2.00 ddd (14, 10, 7) 1.81 br dd (14, 5, ~1) 7.15 6.42 3.76^s s 6.40 8.82 br s 3.21 br s (~1) 3.77^s s 2.76 br d (10, ~4, ~4) 2.98 br dd (10, 7.5, ~2) 1.95^s m (7.5, ~4, 3) 1.90^s m (~4, 3, ~2) 3.73 t (3, 3) 3.56^s dd (10, 7.5) 3.93^s dd (10, 5) 4.07 dd (7.5, 5) 2.37 br d (15, ~1) 2.78 d (15)
NAME: 12-Hydroxy-11-methoxydiaboline FREQUENCY: 300 MHz SOLVENT: CDCl₃ REFERENCE: (60) F.C. Ohiri et al., <i>Planta Med.</i>, 1984, 50, 446. NOTES:	NAME: Vincarodine FREQUENCY: 220 MHz SOLVENT: CDCl₃/D₂O REFERENCE: (61) N. Neuss et al., <i>Helv. Chim. Acta</i>, 1973, 56, 2860. NOTES:
NAME: 398 MF: C₂₂H₂₆N₂O₅ NO: 126  2.80 ddd (12.2, 11.0, 7.5) 3.35 dd (11.0, 7.8) 1.91 dd (12.2, 7.5) 1.72 ddd (12.2, 12.2, 7.8) 1.57 br d (11.0) 6.72 d (8.0) 6.58 d (8.0) 3.87 s 10.2 br s 2.44 s 4.25 d (11.0) 3.87 s 1.40 br d (15.0) 2.70 d (15.0) 3.70 br d (15.0) 2.20 dm (15.0) 5.85 m (7.0, 5.0) 3.68 dd (13.8, 7.0) 4.85 dd (13.8, 5.0) 3.40 br s 5.29 br s	NAME: 398 MF: C₂₂H₂₆N₂O₅ NO: 128  4.11 s 7.32 d (8.5) 6.80 dd (8.5, 2.0) 3.77 s 6.52 d (2.0) 4.05 s 2.72 (12.0) 2.37 (12.0) 1.76 m (15.2, 7.6) 2.07 m (15.2, 7.6) 2.85 m (16.8, 10.0, 7.5) 2.61 m (16.8, 8.0, 1.0) 3.12 m (14.5, 7.5, 1.0) 3.26 m (14.5, 10.0, 8.0) 2.26 dd (13.0, 2.2) 2.14 dd (13.0, 2.5) 2.45 3.72 q (2.8, 2.5, 2.2) 3.93 d (2.8) 1.05 t (7.6)

NAME: Vincamine FREQUENCY: 400 MHz REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NOTES: 17R.	NAME: Diacetylsandwichine FREQUENCY: 400 MHz REFERENCE: (10) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 1503. NOTES: 17S.	NAME: 3-Ketopropyl-19R-heyneanine FREQUENCY: 300 MHz REFERENCE: (62) P. Perera et al., <i>Phytochemistry</i>, 1985, 24, 2097. NOTES:
MF: $C_{24}H_{28}N_2O_4$ MO: 129  1.85 s 6.98 6.73 7.17 6.66 2.64 s 3.23 d (5) 3.58 dd(d) (10, 5, ~1) 1.54 dd(d) (14, ~2) 1.81 d(d) (12, ~1) 2.54 dd (12, 5) 3.64 s 3.63 d(d) (5, ~1) 5.67 s 3.49 def 3.47 def 5.29 br q (7) 1.55 br d (7) 3.50 d(d) (5, ~2) 2.63 dd(d) (14, 5, ~1)	MF: $C_{24}H_{30}N_2O_4$ MO: 131  2.03^a s 7.08 6.78 7.15 6.64 2.78 s 3.02 s(d) (<0.5) 3.71 d(dd) (10, <1, <0.5) 1.68 def (10, <1) 1.68 def (~4, <1) 2.15 d(d) (12, ~1) 1.36 dd (12, 5) 2.58 ddd (9, ~6, ~5) 2.98 dd(d) (~6, 5, ~1) 5.68 d (9) 5.25 s(d) (<0.5) 2.10^a s 0.90 t (7, 7) 1.40 m (7) 1.65 m (7) 1.38 m (~3, <0.5) 1.96 m (~5, ~4, ~3, <1)	MF: $C_{24}H_{30}N_2O_4$ MO: 132  3.10-3.25 m 3.29-3.40 m 3.10-3.25 m 7.43 br d (7.5) 7.16 ddd (7.5, 7.5, 1.5) 7.09 ddd (7.5, 7.5, 1.5) 7.23 br d (7.5) 7.81 br s 4.11 br s 2.63 dd (13, 1.2) 3.71 s 2.10 d (13) 2.76 dd (17, 8.5) 2.11 s 2.66 dd (17, 4.5) 1.90 m 1.26 dd (6.0, 2.2) 3.87 br qd (6.5, 2.8) 1.40 m 1.45 m 1.62 m 1.86 m

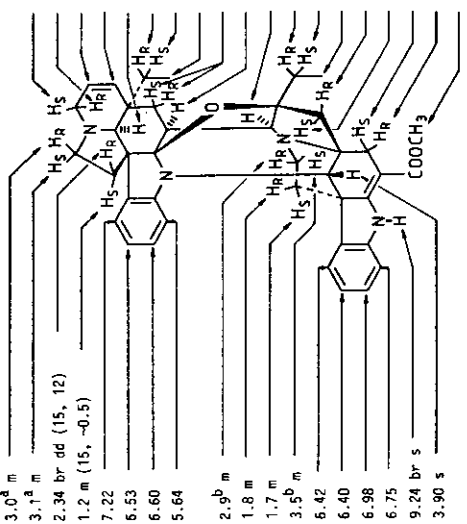
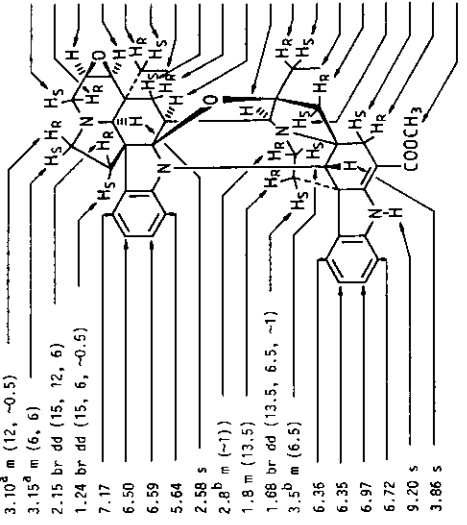
NAME: Picraline FREQUENCY: 300 MHz REFERENCE: (52) T.A. van Beek et al., <u>J. Nat. Prod.</u>, 1985, 48, 400. NO: 133 NOTES:	NAME: Methyl reserpate FREQUENCY: 400 MHz REFERENCE: (63) M. Lounasmaa et al., <u>Heterocycles</u>, 1985, 23, 371. NO: 135 NOTES: Three CH₃O-groups at 3.83 (s), 3.80 (s) and 3.58 (s).	NAME: (-)-N-Methoxycarbonyl-12-methoxykopsalpine FREQUENCY: 400 MHz REFERENCE: (64) X.Z. Feng et al., <u>Planta Med.</u>, 1983, 48, 280. NO: 136 NOTES:
NAME: Picraline FREQUENCY: 300 MHz REFERENCE: (52) T.A. van Beek et al., <u>J. Nat. Prod.</u>, 1985, 48, 400. NO: 133 NOTES:	NAME: Methyl reserpate FREQUENCY: 400 MHz REFERENCE: (63) M. Lounasmaa et al., <u>Heterocycles</u>, 1985, 23, 371. NO: 135 NOTES: Three CH₃O-groups at 3.83 (s), 3.80 (s) and 3.58 (s).	NAME: (-)-N-Methoxycarbonyl-12-methoxykopsalpine FREQUENCY: 400 MHz REFERENCE: (64) X.Z. Feng et al., <u>Planta Med.</u>, 1983, 48, 280. NO: 136 NOTES:
NAME: Picraline FREQUENCY: 300 MHz REFERENCE: (52) T.A. van Beek et al., <u>J. Nat. Prod.</u>, 1985, 48, 400. NO: 133 NOTES:	NAME: Methyl reserpate FREQUENCY: 400 MHz REFERENCE: (63) M. Lounasmaa et al., <u>Heterocycles</u>, 1985, 23, 371. NO: 135 NOTES: Three CH₃O-groups at 3.83 (s), 3.80 (s) and 3.58 (s).	NAME: (-)-N-Methoxycarbonyl-12-methoxykopsalpine FREQUENCY: 400 MHz REFERENCE: (64) X.Z. Feng et al., <u>Planta Med.</u>, 1983, 48, 280. NO: 136 NOTES:

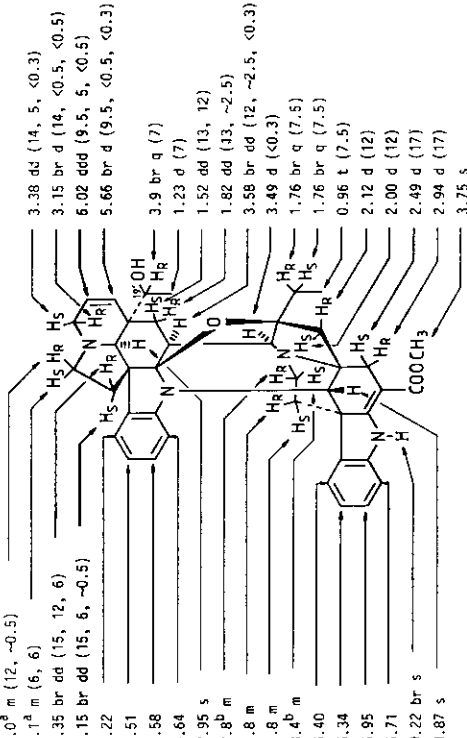
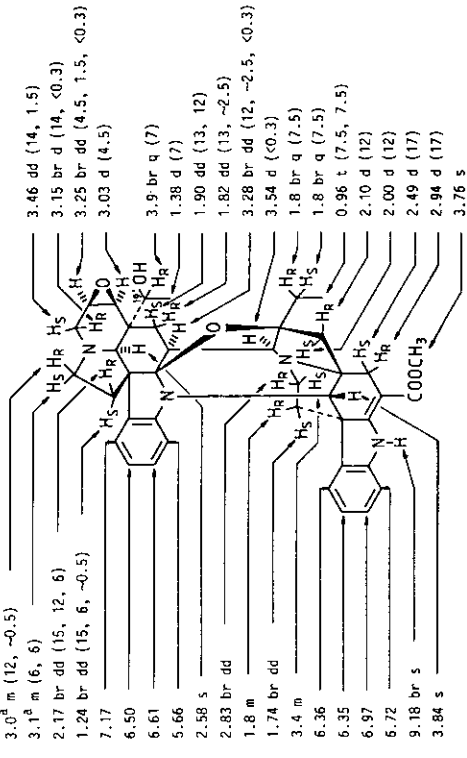
NAME: (-)-N-Methoxycarbonyl-11,12-dimethoxykopsinaline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (64) X. Z. Feng et al., <i>Planta Med.</i>, 1983, 49, 280. NOTES:	NAME: (-)-N-Methoxycarbonyl-11,12-methylenedioxykopsinaline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (64) X. Z. Feng et al., <i>Planta Med.</i>, 1983, 49, 280. NOTES:	NAME: (-)-N-Methoxycarbonyl-11,12-dimethoxykopsinaline MW: 472 MF: C₂₅H₃₂N₂O₇ NO: 139  3.08 dd 2.95 m 1.75 m 2.18 ddd 6.91 d 6.58 d 3.87^a s 2.82 br s 3.93^a s 3.76^b s 3.79^b s 6.68 s 3.05 br d 2.90 br dd 1.25 br d 1.82 br ddd 1.65 m 1.27 br d 2.94 d 1.42 d 1.08 ddd 1.08 ddd 1.50 ddd 2.39 ddd	NAME: Raucaffricine MW: 512 MF: C₂₇H₃₂N₂O₈ NO: 140 FREQUENCY: 300/400 MHz SOLVENT: C₆D₆N REFERENCE: (66) H. Schibel et al., <i>Helv. Chim. Acta.</i>, 1984, 67, 2078. NOTES: Signals of the glucose units 5.29 (d, 8), 4.52 (dd, 12, 2), 4.33 (dd, 12, 5), 4.2-4.35 (2H, m), 4.1 (t, 8.0) and 3.94 (m).  1.69 dd (11.5) 2.74 dd (11.5, 4.5) 2.16 s 7.81^a d (8) 7.42^b t (8) 7.28^b t (8) 7.66^a d (8) 5.23 s 5.14 d (9.5) 1.84 dd (13.5, 5) 2.16 [addn of C₆D₆: 2.26 dd (13.5, 9.5)] 2.4 t (5) 3.24 m [C₆D₆: 3.30 t (6)] 5.43 br s 5.86 q (6.5) 1.50 d (6.5) 3.24 m [C₆D₆: 3.35 t (5)]
NAME: (-)-N-Methoxycarbonyl-11,12-methylenedioxykopsinaline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (64) X. Z. Feng et al., <i>Planta Med.</i>, 1983, 49, 280. NOTES:	NAME: Vindoline FREQUENCY: 360 MHz SOLVENT: CDCl₃ REFERENCE: (65) A. De Bruyn et al., <i>Bull. Soc. Chim. Belg.</i>, 1981, 90, 185. NOTES:	NAME: 456 MW: 456 MF: C₂₅H₃₂N₂O₆ NO: 138  3.10 dd 2.95 m 1.72 m 2.07 ddd 6.74 d 6.50 d 5.86 def d 5.89 def d 2.86 br s 3.76^a s 3.85^a s 6.98 s 3.05 br d 2.90 br dd 1.28 br d 1.82 br ddd 1.63 m 1.25 br d 2.93 d 1.40 d 1.10 ddd 1.65 m 1.50 ddd 2.35 ddd	NAME: 456 MW: 456 MF: C₂₅H₃₂N₂O₆ NO: 138  2.53 (10.0, 9.2, 7.6) 3.54 (10.0, 8.4, 4.4) 2.35 6.90 (8.0, 2.0) 6.30 (8.0) 3.89 6.08 (2.0) 3.85 2.65 3.37 (15.6, 4.8, 1.4) 2.82 (15.6, 2.6, 1.6) 2.65 5.85 (10.0, 4.8, 1.6) 5.24 (10.0, 2.6, 1.4) 1.64 (14.4, 7.2) 0.49 (7.2) 1.25 (14.4, 7.2) 5.45 2.07 9.50 3.91

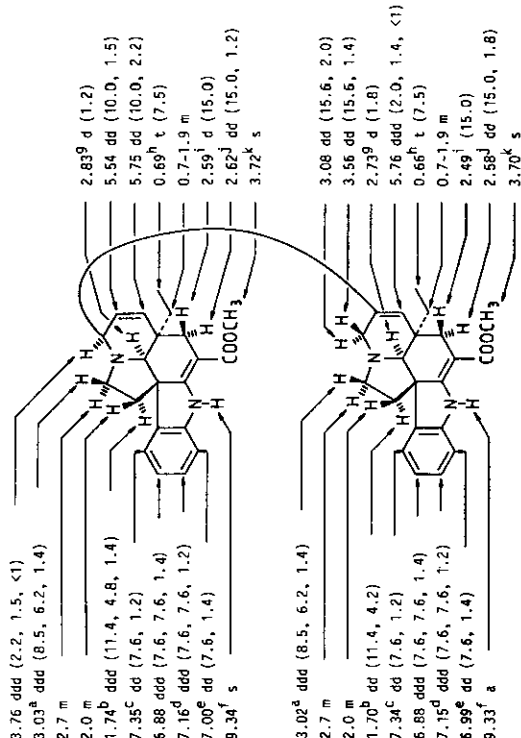
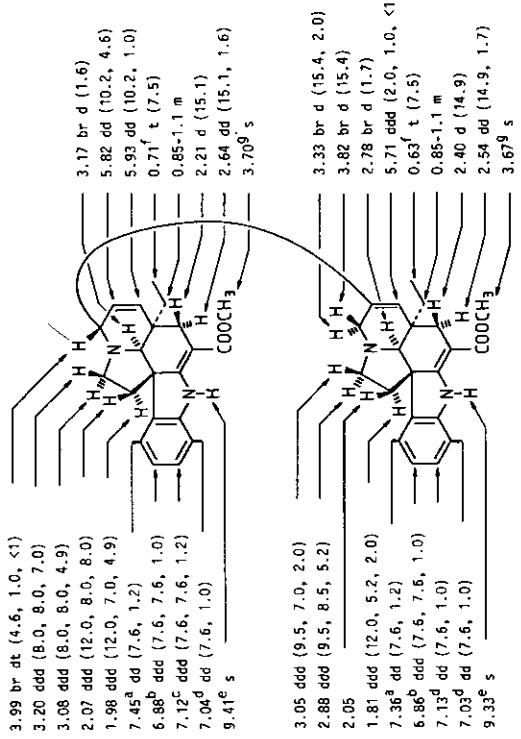
NAME: Gentiacraline FREQUENCY: 400 MHz REFERENCE: (67) G. Massiot et al., <i>C.R. Acad. Sci., Sér. II</i>, 1983, 286, 977. NOTES: See also Ref. 84.	NAME: Deserpine FREQUENCY: 400 MHz REFERENCE: (63) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 371. NOTES: Five CH₃O-groups at 3.89 (9H, s), 3.80 (3H, s) and 3.49 (3H, s).
MM: 545 MF: C₃₂H₃₉N₃O₅ NO: 141 	MM: 578 MF: C₃₂H₃₈N₂O₈ NO: 143 
NAME: Matopentine FREQUENCY: 401 MHz REFERENCE: (68) G. Massiot et al., <i>Heterocycles</i>, 1983, 20, 2339. NOTES: See also Ref. 85.	NAME: Reserpine FREQUENCY: 400 MHz REFERENCE: (63) M. Lounasmaa et al., <i>Heterocycles</i>, 1985, 23, 371. NOTES: Six CH₃O-groups at 3.90 (9H, s), 3.81 (3H, s), 3.80 (3H, s) and 3.49 (3H, s).
MM: 570 MF: C₃₈H₄₂N₄O NO: 142 	MM: 608 MF: C₃₃H₄₀N₂O₉ NO: 144 

NAME: Rescinamine FREQUENCY: 400 MHz REFERENCE: (63) M. Lounasmaa et al., Heterocycles, 1985, 23, 371. NOTES: Six CH₃O-groups at 3.97 (6H, s), 3.89 (3H, s), 3.84 (3H, s), 3.82 (3H, s) and 3.53 (3H, s).	NAME: Afrocuparine FREQUENCY: 360 MHz REFERENCE: (70) M. Caprasse et al., Planta Med., 1984, 50, 131. NOTES:
MM: 634 MF: C₃₅H₄₂N₂O₉ NO: 145  7.34 6.78 6.85 7.67 br s 4.48 br s (5, -3) 1.79 ddd (14, 3, -3) 2.32 ddd (14, 14, 5) 2.03 ddd (14, 5, 3, -3) 2.66 dd (12, 5) 3.83 dd (12, 9) 5.37 d (17) 2.96 ddd (16, 12, 7) 2.50 br d (16, <1) 3.18 m (7, <1) 3.18 m (12) 2.46 dd (12, -2) 3.05 dd (12, 4) 1.87 ddd (12, 4, 4, 3, -2) 1.95 ddd (12, 5, 4) 2.26 m (12, 12, 12) 4.95 ddd (12, 9, 5) 7.63 d (17) 6.76 s	MM: 582 MF: C₃₉H₄₂N₄O NO: 147  7.12-7.79 8.42 s 3.35 t 4.7 t (J=14.6, H₂-3.5) 7.82 s 2.91 q (~15) 2.85 q (~15) 1.34 t (7.5)
NAME: Cadamine tetraacetate FREQUENCY: 270 MHz REFERENCE: (69) S.S. Handa et al., J. Nat. Prod., 1983, 46, 325. NOTES: Signals of the glucose unit: 5.07-5.28 (4H, m), 3.21 (dt), 2.68-2.86 (2H, m), 2.08 (3H, s), 2.07 (3H, s), 2.03 (3H, s) and 2.01 (3H, s).	MM: 712 MF: C₃₅H₄₀N₂O₁₄ NO: 146  7.34 d (8) 7.17 dt (8, 7.3) 7.09 t (7.6, 7.3) 7.54 br d (7.6) 9.68 br d 2.13 dd (12.6, 5.6) 1.82 t (13.0, 12.6) 3.29 ddd (13.0, 5.6, 5.6) 3.65 s 4.63 dd (12.2, 3.0) 4.23 dd (12.2, 3.6) 3.77 dt (9.6, 3.6, 3.0) 5.19 d (9.6) 3.42 d (10.3) 2.96 dd (10.3, 7.1) 4.81 br d (7.1, 1.7) 1.66 ddd (9.3, 5.6, 1.7) 5.66 d (9.3) 7.48 s

NAME: Pseudovobiparine FREQUENCY: 300 MHz SOLVENT: CDCl_3 REFERENCE: (7) T.A. van Beek et al., <i>Planta Med.</i>, 1985, 277. NOTES:	NAME: Vobiparine FREQUENCY: 500 MHz SOLVENT: CDCl_3 REFERENCE: (7) T.A. van Beek et al., <i>Tetrahedron Lett.</i>, 1984, 25, 2057. NOTES:
$\text{MH: } 600$ $\text{MF: } \text{C}_{39}\text{H}_{44}\text{N}_4\text{O}_2$ $\text{NO: } 148$ 3.07 (14.3, 11.7, 7.0) 3.57 m 1.91 m 2.22 (13.7, 11.7, 8.3, 5.3) 7.04 (1) 7.01 (8.4, 1) 7.32 (8.4) 7.88 br s 5.39 s 5.27 s 4.26 (17.9) 4.56 (17.9) 3.91 (15.5, 1) 3.30 (15.5) 5.36 (6.9) 1.45 (6.9, 1) 3.93 br s	$\text{MH: } 600$ $\text{MF: } \text{C}_{39}\text{H}_{44}\text{N}_4\text{O}_2$ $\text{NO: } 149$ 3.65 m (23-30) 3.19 m (23-26) 2.37 m (23-37) 2.20 (~13.5, ~7.5, ~4.3, ~2.2) 7.37 (8) 7.05 (8, 7.5) 7.14 (8, 7.5) 7.21 (8) 7.56 br s 4.49 (17.5) 4.39 (17.5) 3.97 (15.2, 1.9) 3.45 (15.2) 5.39 (6.8) 1.68 (6.8, 1.9) 4.45 (~5, ~2.2) 5.96 (10.1)

NAME: Ervatoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:	NAME: Ervatoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (73) A. Henriques et al., Acta Chem. Scand., Ser. B, 1979, 33, 775. NOTES:
 ¹H NMR assignments (ppm): 3.0^b m 3.1^a m 2.34 br dd (15, 12) 1.2 m (15, -0.5) 7.22 6.53 6.60 5.64 2.9^b m 1.8 m 1.7 m 3.5^b m 6.42 6.40 6.98 6.75 9.24 br s 3.90 s 3.38 dd (14, 5, <0.3) 3.18 br d (14, <0.5, <0.3) 5.92 ddd (9.5, 5, <0.5) 5.75 br d (9.5, <0.5, <0.3) 2.75 s 1.5^c m (7) 1.6^c m (7) 0.90 t (7) n.d. 3.12 br d (12) 3.50 d (<0.3) 1.8 br q (7.5) 1.8 br q (7.5) 0.96 t (7.5) 2.15 d (12) 2.01 d (12) 2.50 d (17.5) 2.95 d (17.5) 3.78 s	 ¹H NMR assignments (ppm): 3.10^b m (12, -0.5) 3.15^a m (6, 6) 2.15 br dd (15, 12, 6) 1.24 br dd (15, 6, -0.5) 7.17 6.50 6.59 5.64 2.58 s 2.8^b m (~1) 1.8 m (13.5) 1.68 br dd (13.5, 6.5, -1) 3.5^b m (6.5) 6.36 6.35 6.97 6.72 9.20 s 3.86 s 3.47 dd (14, 1.5) 3.10 br d (14, <0.3) 3.25 br dd (4.5, 1.5, <0.3) 3.03 d (4.5) 1.51^c dq (14, 7) 1.63^c dq (14, 7) 0.97 t (7, 7) 1.35 dd (13, -2.5) 1.92 dd (13, 12) 3.10 br d (12, -2.5, <0.3) 3.54 d (<0.3) 1.78^d br q (7.5) 1.80^d br q (7.5) 0.96 t (7.5, 7.5) 2.11 d (12) 2.00 d (12) 2.49 d (17.5) 2.94 d (17.5) 3.75 s

NAME: 19'-Hydroxyervafoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:	NAME: 19'-Hydroxyervafoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:	NAME: 19'-Hydroxyervafoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:  3.0^a m (12, -0.5) 3.1^a m (6, 6) 2.35 br dd (15, 12, 6) 1.15 br dd (15, 6, -0.5) 7.22 6.51 6.58 5.84 2.95 s 2.8^b m 1.8 m 1.8 m 3.4^b m 6.40 6.34 6.95 6.71 9.22 br s 3.87 s 3.38 dd (14, 5, <0.3) 3.15 br d (14, <0.5) 5.02 ddd (9.5, 5, <0.5) 5.66 br d (9.5, <0.5, <0.3) 3.9 br q (7) 1.23 d (7) 1.52 dd (13, 12) 1.82 dd (13, ~2.5) 3.58 br dd (12, ~2.5, <0.3) 3.49 d (<0.3) 1.76 br q (7.5) 1.76 br q (7.5) 0.96 t (7.5) 2.12 d (12) 2.00 d (12) 2.49 d (17) 2.94 d (17) 3.75 s
NAME: 19'-Hydroxyervafoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:	NAME: 19'-Hydroxyervafoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:	NAME: 19'-Hydroxyervafoline FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (72) A. Henriques et al., Acta Chem. Scand., Ser. B, 1980, 34, 509. NOTES:  3.0^a m (12, -0.5) 3.1^a m (6, 6) 2.17 br dd (15, 12, 6) 1.24 br dd (15, 6, -0.5) 7.17 6.50 6.61 5.66 2.58 s 2.83 br dd 1.8 m 1.74 br dd 3.4 m 6.36 6.35 6.97 6.72 9.18 br s 3.84 s 3.46 dd (14, 1.5) 3.15 br d (14, <0.3) 3.25 br dd (4.5, 1.5, <0.3) 3.03 d (4.5) 3.9 br q (7) 1.38 d (7) 1.90 dd (13, 12) 1.82 dd (13, ~2.5) 3.28 br dd (12, ~2.5, <0.3) 3.54 d (<0.3) 1.8 br q (7.5) 1.8 br q (7.5) 0.96 t (7.5, 7.5) 2.10 d (12) 2.00 d (12) 2.49 d (17) 2.94 d (17) 3.76 s

NAME: Voafrine A FREQUENCY: 300 MHz SOLVENT: $(\text{CD}_3)_2\text{CO}$ REFERENCE: (74) J. Stockigt et al., Helv. Chim. Acta, 1983, 66, 2535. NOTES:	NAME: Voafrine B FREQUENCY: 500 MHz SOLVENT: $(\text{CD}_3)_2\text{CO}$ REFERENCE: (74) J. Stockigt et al., Helv. Chim. Acta, 1983, 66, 2535. NOTES:
MM: 670 MF: $\text{C}_{22}\text{H}_{16}\text{N}_2\text{O}_4$ MO: 154  3.76 ddd (2.2, 1.5, <1) 3.03^a ddd (8.5, 6.2, 1.4) 2.7 m 2.0 m 1.74^b ddd (11.4, 4.8, 1.4) 7.35^c dd (7.6, 1.2) 6.88 ddd (7.6, 7.6, 1.4) 7.16^d ddd (7.6, 7.6, 1.2) 7.00^e dd (7.6, 1.4) 9.34^f s 2.83^g d (1.2) 5.54 dd (10.0, 1.5) 5.75 dd (10.0, 2.2) 0.69^h t (7.5) 0.7-1.9 m 2.59ⁱ d (15.0) 2.65^j dd (15.0, 1.2) 3.72^k s	MM: 670 MF: $\text{C}_{22}\text{H}_{16}\text{N}_2\text{O}_4$ MO: 155  3.99 br dt (4.6, 1.0, <1) 3.20 ddd (8.0, 8.0, 7.0) 3.08 ddd (8.0, 8.0, 4.9) 2.07 ddd (12.0, 8.0, 8.0) 1.98 ddd (12.0, 7.0, 4.9) 7.45^a dd (7.6, 1.2) 6.88^b ddd (7.6, 7.6, 1.0) 7.13^c ddd (7.6, 7.6, 1.2) 7.04^d dd (7.6, 1.0) 9.41^e s 3.05 ddd (9.5, 7.0, 2.0) 2.88 ddd (9.5, 8.5, 5.2) 2.05 1.81 ddd (12.0, 5.2, 2.0) 7.36^a dd (7.6, 1.2) 6.86^b ddd (7.6, 7.6, 1.0) 7.13^d dd (7.6, 1.0) 7.03^d dd (7.6, 1.0) 9.33^e s 3.33 br d (15.4, 2.0) 3.82 br d (15.4) 2.78 br d (1.7) 5.71 ddd (2.0, 1.0, <1) 0.63^f t (7.5) 0.85-1.1 m 2.40 d (14.9) 2.54 dd (14.9, 1.7) 3.67^g s

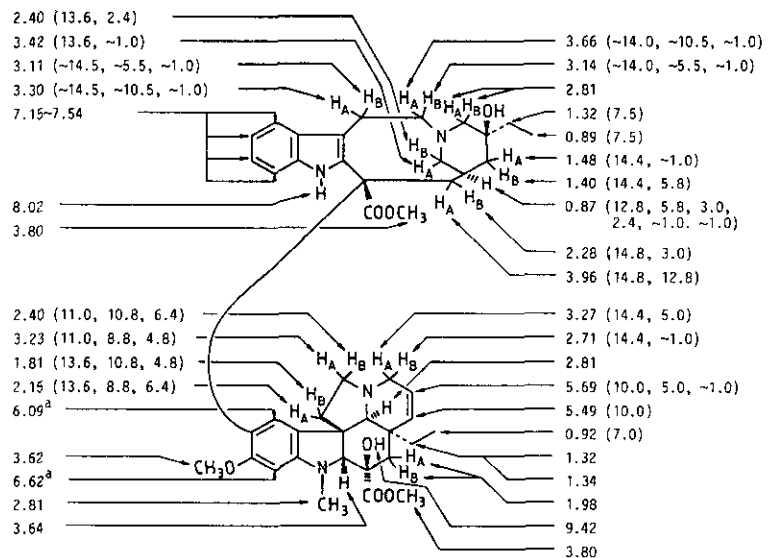
NAME: Ervahanine A FREQUENCY: 400 MHz REFERENCE: (49) X.-Z. Feng et al., J. Nat. Prod., 1981, 44, 670. NOTES:	NAME: Ervahanine B FREQUENCY: 400 MHz REFERENCE: (49) X.-Z. Feng et al., J. Nat. Prod., 1981, 44, 670. NOTES:	MM: 674 MF: $C_{42}H_{50}N_4O_4$ NO: 156	MM: 674 MF: $C_{42}H_{50}N_4O_4$ NO: 157
NAME: Ervahanine A FREQUENCY: 400 MHz REFERENCE: (49) X.-Z. Feng et al., J. Nat. Prod., 1981, 44, 670. NOTES:	NAME: Ervahanine B FREQUENCY: 400 MHz REFERENCE: (49) X.-Z. Feng et al., J. Nat. Prod., 1981, 44, 670. NOTES:	MM: 674 MF: $C_{42}H_{50}N_4O_4$ NO: 156	MM: 674 MF: $C_{42}H_{50}N_4O_4$ NO: 157

NAME: Ervathine C FREQUENCY: 400 MHz SOLVENT: CDCl₃ REFERENCE: (49) X.-Z. Feng et al., J. Nat. Prod., 1981, 44, 670. NOTES:	NAME: 17-Deacetoxyneurisine FREQUENCY: 360 MHz SOLVENT: CDCl₃ REFERENCE: (75) A. De Bruyn et al., Bull. Soc. Chim. Belg., 1982, 91, 75. NOTES:	MW: 674 MF: C₂₂H₃₀N₄O₄ NO: 156	MW: 750 MF: C₂₄H₃₄N₄O₇ NO: 159
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NAME: 17-Deacetoxyvinblastine
 FREQUENCY: 360 MHz SOLVENT: CDCl_3
 REFERENCE: (75) A. De Bruyn *et al.*, *Bull. Soc. Chim. Belg.*,
 1982, 91, 75.

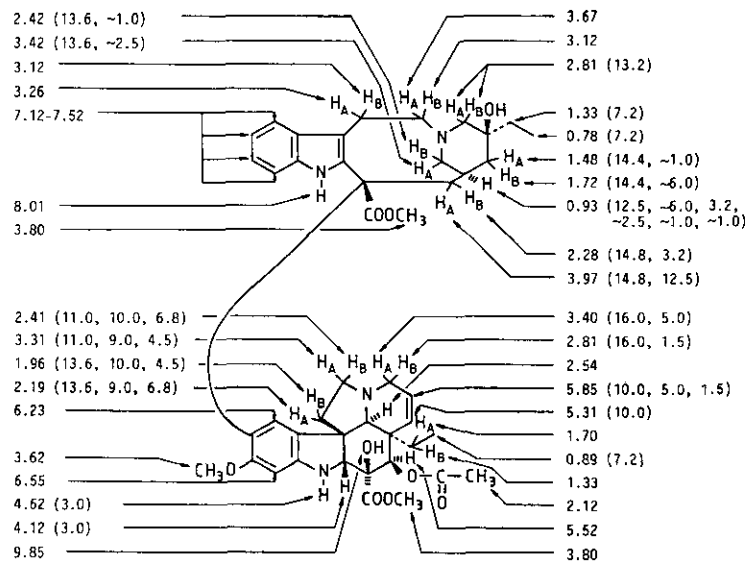
NOTES:

MW: 752
 MF: $\text{C}_{44}\text{H}_{56}\text{N}_4\text{O}_7$
 NO: 160



NAME: N-Deformylvincristine
 FREQUENCY: 360 MHz SOLVENT: CDCl_3
 REFERENCE: (76) R. Simonds *et al.*, *Planta Med.*, 1984, 50, 274.
 NOTES:

MW: 796
 MF: $\text{C}_{46}\text{H}_{56}\text{N}_4\text{O}_9$
 NO: 161



NAME: Leurosine FREQUENCY: 360 MHz REFERENCE: (65) A. De Bruyn et al., <i>Bull. Soc. Chim. Belg.</i>, 1981, 90, 185. MM: 808 MF: $C_{16}H_{16}N_4O_9$ NO: 162 NOTES:	
NAME: Vinblastine FREQUENCY: 360 MHz REFERENCE: (77) A. De Bruyn et al., <i>Bull. Soc. Chim. Belg.</i>, 1980, 89, 629. MM: 810 MF: $C_{46}H_{56}N_4O_9$ NO: 163 NOTES: For NOE measurements, see Ref. 86.	

INDEX OF ALKALOIDS

	No	Ref.		No	Ref.
<u>A</u>					
17-0-Acetyljajmaline	106	10	Diacetyljajmaline	130	10
Acetyldihydrovomilenine	119	10	Diacetylsandwichine	131	10
N ₈ -Acetyl-0-methyl-strychnosplendine	107	55	Diacetylsarpagine	122	16
0-Acetylvallesamine	113	42	Dichomine	21	21
Affinisine	31	16	Difforlemenine	123	59
Afrocurarine	147	70	20R-18,19-Dihydroxypseudo-vincadiformine	109	50
Ajmalicine	71	47	<u>E</u>		
Ajmaline	47	10	(+)-Eburnamine	22	15
Akuammidine	72	16	(-)-Eburnamonine	11	15
Akuammigine	73	47	Ellipticine	1	6
Akuammline	120	52	16-Epiaffinine	41	32
Albifloranine	88	37	19-Epiajmalicine	75	47
16,17-Anhydrotacamine	51	18	Epicathenamine	67	44
Apparicine	3	7	19R-Epiheyneanine	89	42
Aricine	114	56	20-Epi-ibophyllidine	42	20
Aristoserratenine	9	13	16-Epi-E-isositsirikine	90	44
Aristoserratine	32	27	16-Epi-Z-isositsirikine	91	44
			(+)-20-Epipandoline	92	50
<u>B</u>			16-Epitacamine	93	18
Brucine	121	58	Ervafolene	150	72
			Ervafoline	151	73
<u>C</u>			Ervahanine A	156	49
Cadambine tetraacetate	146	69	Ervahanine B	157	49
Cathenamine	66	44	Ervahanine C	158	49
Conopharyngine	125	52	<u>F</u>		
Coronaridine	54	37	Fluorocurine	46	29
<u>D</u>					
17-Deacetoxyeuroisine	159	75	<u>G</u>		
17-Deacetoxyvinblastine	160	75	Geissoschizine	76	48
Deacetylakuammline	74	31	Geissoschizol	23	22
Deacetyldeformoakuammline	39	31	Gentiacraline	141	67
N-Deacetylisorretuline	16	19			
N-Deacetylretuline	17	19	<u>H</u>		
16R-Decarbomethoxytacamine	18	18	Hazuntinine	134	53
16S-Decarbomethoxytacamine	19	18	Heyneanine	94	37
Deethylbophyllidine	20	20	Hobartine	12	11
N-Deformylvincristine	161	76	3R-Hydroxycoronaridine	95	51
1,2-Dehydrodeacetylretuline	10	14	21-Hydroxycyclolochnerine	58	39
Deserpidine	143	63	10-Hydroxydeacetylakuammline	108	31

	No	Ref.		No	Ref
20S-Hydroxy-1,2-dehydropseudo-aspidospermidine	24	18	Mauisensine	33	10
23-Hydroxy-2,16-dehydroretuline	77	14	Mavacurine	35	29
16S-Hydroxy-16,22-dihydroapparicine	4	8	Melinonine-E	8	12
18-Hydroxy-20-epi-ibophyllidine	59	40	(-)-N-Methoxycarbonyl-11,12-dimethoxykopsinaline	139	64
19R-Hydroxy-20-epi-ibophyllidine	60	40	(-)-N-Methoxycarbonyl-12-methoxykopsinaline	136	64
19S-Hydroxy-20-epi-ibophyllidine	61	40	(-)-N-Methoxycarbonyl-11,12-methylenedioxykopsinaline	137	64
19-Hydroxy-20-epipandoline	110	50	12-Methoxy-14,15-dehydrovincamine	116	57
19'-Hydroxyervafolene	152	72	11-Methoxytabersonine	102	53
19'-Hydroxyervafoline	153	72	N _B -methylantirrhine	38	24
3-(8-Hydroxyethyl)-coronaridine	115	22	17-O-Methylkribine	56	38
10-Hydroxygeissoschizol diacetate	124	22	Methyl reserpate	135	63
14B-Hydroxygeissidine	65	43			
10-Hydroxyheyneanine	111	22			
19-Hydroxyibophyllidine	62	40	<u>N</u>		
16-Hydroxyisoretulinal	78	28	Normacusine B	13	16
12-Hydroxy-11-methoxydiaboline	126	60			
19S-Hydroxytacamine	112	18	<u>O</u>		
17-Hydroxytacamonine	36	18	3-Oxocoronaridine	82	22
19-Hydroxyvandrikine	127	53	17-Oxoellipticine	2	6
<u>I</u>					
Ibophyllidine	43	20	<u>P</u>		
3-Isoajmalicine	79	47	(+)-Pandoline	98	50
Isoajmaline	48	10	Peduncularine	5	9
(-)-Isoeburnamine	25	15	Peduncularistine	29	25
3-Iso-19-epiajmalicine	80	47	Pericyclivine	40	16
Isomalindine	27	24	Picraline	133	52
3-Isorauniticine	81	47	Polyneuridine	83	16
Isoretuline	55	19	Pseudovobparicine	148	7
Isosandwichine	49	10			
E-Isositsirikine	96	44	<u>Q</u>		
Z-Isositsirikine	97	44	Quebrachidine	84	10
Isovallesiachotamine	68	45			
<u>K</u>			<u>R</u>		
3-Ketopropyl-19R-heyneanine	132	62	Raucaffricine	140	66
			Raucubaine	63	41
<u>L</u>			Raucubainine	99	41
Leurosine	162	65	Rauflorine	6	10
			Rauniticine	85	47
<u>M</u>			Rescinnamine	145	63
Malindine	28	24	Reserpine	144	63
Matopensine	142	68	Retuline	57	19
			Rosibiline	34	28
			Rosicine	44	33

	No	Ref.		No	Ref.
<u>S</u>			<u>V</u>		
Sorelline	7	11	Vallesiachotamine	70	45
Strempelepine	14	17	Vallesamine	64	42
Strychnine	50	34	Vandrikidine	117	53
Strychnozairine	69	46	Vandrikine	118	53
Strychnoxanthine	30	26	Vinblastine	163	77
			Vincamajine	104	10
<u>I</u>			Vincamedine	129	10
Tabersonine	52	35	Vincarodine	128	61
Tacamine	100	18	Vindoline	138	65
Tacamonine	15	18	Vindoline	53	36
Tasmanine	37	30	Voachalotine	105	16
Tetrahydroalstonine	86	47	Voafrine A	154	74
Triabunnine	45	25	Voafrine B	155	74
Trichophylline	103	54	Voaphylline	26	23
			Vobasine	87	49
			Vobasinol	101	52
			Vobparicine	149	71

ACKNOWLEDGEMENT

We wish to thank Mr. T. Hokkanen for drawing the formulae and Mrs. Rea Isokoski for typing the manuscript.

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