ROOT BARK ALKALOIDS OF RAUWOLFIA OBSCURA

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Key Word Index—Rauwolfia obscura; Apocynaceae; indole alkaloids; ajmaline; alstonine; deserpidine; methoxy-ajmaline; methyl deserpidate; rescinnamine; reserpine; vomalidine; z-yohimbine.


Source. Kinshasa, Zaire (voucher No. RAU 108-701, deposited with the Collection of Materia Medica and Herbaria, University of Bradford).

Previous work: Isolation of alstonine, reserpine, ajmaline, obscurine, obscuridine and tetraphyllicine; chromatographic evidence of rescinnamine.

Present work: Ten alkaloids were detected; six were isolated and identified and three were identified by co-TLC.

EXPERIMENTAL

Powdered root bark was extracted by maceration using ammoniated MeOH. The filtered extract, after evaporation to dryness under reduced pressure, was dissolved in 1 N HCl and fractionated as described earlier.

Weak base fraction. Using PLC two alkaloids were isolated, deserpidine (m.p., m.m.p., UV, IR, MS, co-TLC) and vomalidine (m.p., UV, IR, MS agree with published data).

Strong base fraction. Using column chromatography and PLC four compounds were isolated: z-yohimbine (m.p., m.m.p., UV, IR, MS, co-TLC), methyl deserpidate (UV, IR, MS, indicating E-ring methoxy-yohimbine chromatographically identical with the methanolysis product of deserpidine), ajmaline (m.p., m.m.p., UV, IR, MS, co-TLC) and methoxyajmaline, amorphous yellow powder, blue-violet fluorescence in screened UV light (365 nm wavelength), violet colour with FeCl₃/HClO₄ reagent, UV: \( \lambda_{max} 219, 251, 289, \lambda_{min} 229, 274 \text{ nm} \). IR: \( \nu_{max} 3450, 2750, 1620, 1595 \text{ cm}^{-1} \). MS: m/e 356 (M⁺), 341, 327, 230, 213, 212, 200, 199, 198, 182, 174, 173, 131, 130 [agrees with ajmaline except that peaks associated with the aromatic portion are +30 m/e; m/e 230 \( \rightarrow \) m/e 212 indicates that C-H configuration at C-2 of \( \beta \) as in ajmaline]. Co-TLC revealed the presence of a further strong base corresponding to alstonine. The principal alkaloids of the root bark are vomalidine and \( \alpha \)-yohimbine.

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