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THE MOLECULAR STRUCTURE OF (±)-16-EPIORMOSANINE, A NEW ALKALOID FROM *HOVEA LINEARIS*

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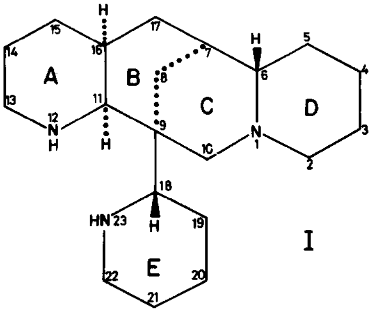
Ormosia-type alkaloids, already known to occur in the genera *Podopetalum* (2), and *Templetonia* (3) are now reported for the first time in a *Hovea* species (Family Leguminosea). One alkaloid, $C_{20}H_{35}N_3$, m.p. 220-222°, from *Hovea linearis* R.Br., is identical with (±)-piptanthine. Another racemic alkaloid, $C_{20}H_{35}N_3$, is new and has been shown by X-ray crystal structure analysis to be (±)-16-epiormosanine, of which one of the enantiomeric forms (I) is shown. Neither racemic nor optically active 16-epiormosanine has been isolated previously from natural sources, although ormosanine and 16-epiormosanine (no physical constants recorded) were reported as hydrogenation products of ormocastrine, an alkaloid later shown to be identical with the hydrochloride of podopetaline (II) (4).



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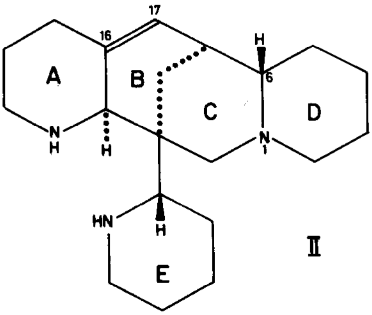

II

(±)-16-Epiormosanine, $C_{20}H_{35}N_3$, crystallizes in the orthorhombic space group $P2_12_12_1$ with a = 11.939(1), b = 14.143(1), c = 22.310(2) Å and Z = 8. Using the *X-RAY* system (5), the structure was solved by direct methods and refined with 2545 terms which had intensities (measured on a Siemens four-circle diffractometer with CuKα radiation) greater than 3σI. Isoptropic refinement by least-squares of the non-hydrogen atoms yielded a reliability index, $R = \Sigma\Delta F/\Sigma F_o$, of 0.082 with all the hydrogens located.

It is interesting to note that 16-epiormosanine resembles podopetaline (II) in the preferred conformation for the C and D rings. The *cis* C/D ring junction (N1 lone pair *cis* to C6-H) contrasts with the conformation of jamine (6) and presumably also with ormosanine which are considered to have a boat form for ring C and a *trans* C/D ring junctions (2). It has been suggested (2) that podopetaline can assume a preferred *cis* C/D conformation because, unlike jamine and ormosanine, it lacks a steric interaction between C16-H and the N1 nitrogen lone pair. It now appears that the absence of such interaction in 16-epiormosanine allows it too to assume a *cis* C/D conformation.

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FOOTNOTES AND REFERENCES

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