

(-)-TEMUCONINE, A NEW BISBENZYLISOQUINOLINE ALKALOID
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ABSTRACT.—*Aristolochia elegans* of Egyptian origin has yielded the new bisbenzylisoquinoline (-)-temuconine [1], which is enantiomeric with the previously described (+)-temuconine obtained from Chilean *Berberis valdiviana*.

In a continuation of our investigation on the alkaloidal constituents of *Aristolochia elegans* Mast. (Aristolochiaceae) (1), we wish to describe the new bisbenzylisoquinoline (-)-temuconine [1], C₃₇H₄₂N₂O₆.

This dimer suffered facile mass spectral fragmentation to supply the weak ion m/z [M - 1]⁺. The base peak, m/z 206, represented rings A' and B'. Another very strong peak was m/z 192 due to rings A and B. This cleavage pattern is typical of bisbenzylisoquinolines of subgroup A (11-12'), which incorporate only tail-to-tail coupling (2).

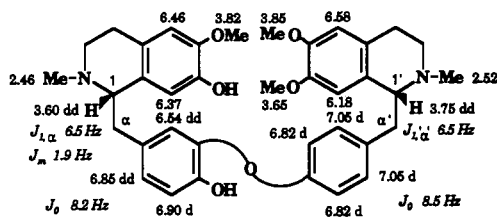
The ¹H-nmr spectrum of (-)-temuconine (CDCl₃, 500 MHz) was also characteristic of subgroup A (3) and has been summarized around structure 1.

3.65, 3.82, and 3.85; as well as eleven aromatic protons with signals stretched between δ 6.30 and 7.10. All of these chemical shifts matched those previously reported for (+)-temuconine found in *Berberis valdiviana* (Berberidaceae) (4) and so indeed did the mass spectrum.

Nevertheless, the strong negative specific rotation of our (-)-temuconine [1] indicated that we had on hand the enantiomer of the previously described dextrorotatory isomer.

The cd spectrum of our (-)-temuconine [1] exhibited troughs at 287 and 223 nm, pointing to the 1*S*, 1'*R* configuration, as indicated in expression 1 (5).

It is worth noting that we have here a



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Two *N*-methyl singlets are in evidence at δ 2.46 and 2.52. Three methoxys are also present, indicated by signals at δ

rare instance in which enantiomeric bisbenzylisoquinolines have been recognized. But it still remains true that to date no bisbenzylisoquinolines have been isolated from nature as racemates.

EXPERIMENTAL

GENERAL EXPERIMENTAL PROCEDURES.—Plant material and alkaloid extraction are de-

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scribed in El-Sebakhy and Waterman (1).

(-)-TEMUCONINE [1].—Amorphous, 8 mg; $[\alpha]_D -99.8^\circ$ ($c = 2.4$, MeOH); uv λ max (MeOH) 225, 282 nm ($\log \epsilon$ 3.26, 3.05); cd (MeOH) $\Delta\epsilon$ (nm) -4.9 (287), -9.8 (230), -14.8 (223), with strong negative tail; eims m/z $[M - 1]^+$ 609 (0.3), 446 (0.6), 418 (0.3), 207 (14), 206 (100), 193 (13), 192 (99), 190 (10), 177 (9). Significant nmr nOe's were H-1 to 2-NMe 18%, H-1 to H-8 29%, H-1 to H-10 10%, H-1 to H-14 10%, Me-2 to H-1 30%, H-5 to 6-OMe 30%, 6-OMe to H-5 44%, H-8 to H-1 17%, H-10 to H-1 6%, H-14 to H-1 6%, H-1' to 2'-NMe 15%, H-1' to H-8' 26%, H-1' to H-10' and H-14' 23%, H-5' to 6'-OMe 29%, 6'-OMe to H-5' 45%, 7'-OMe to H-8' 44%, H-8' to H-1 18%, H-8' to 7'-OMe 36%, H-10' and H-14' to H-1 13%, H-10' and H-14' to H-11' and H-13' 49%, H-11' and H-13' to H-10' and H-14' 72%.

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