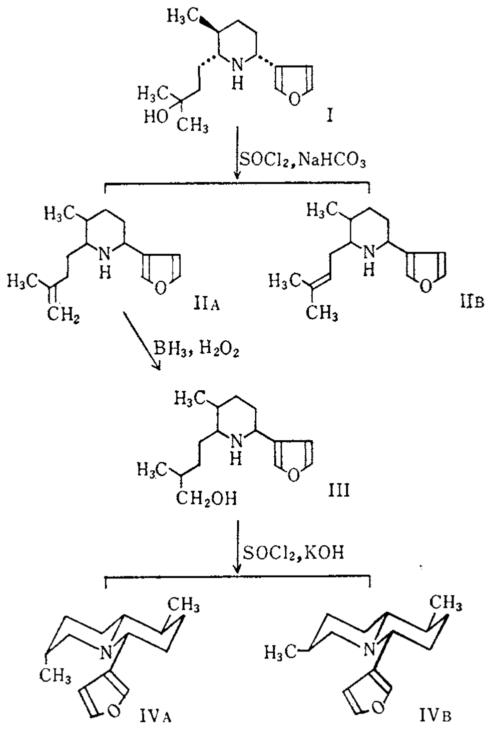
The Absolute Configuration of Nupharamine

By Ichiro KAWASAKI, Shigeru MATSUTANI
and Takeo KANEKO

(Received February 15, 1963)

The chlorination and subsequent dehydrochlorination of nupharamine (I)[1-3] gave olefins, which were separated into two isomers of anhydronupharamine, IIA and IIB, by alumina chromatography. IIA showed an infrared absorption at 880 cm^{-1} identified as an endo-methylene group. The hydroboration-oxidation of IIA gave isonupharamine (III) (perchlorate m. p., 164~166°C; Found: C, 51.35; H, 7.47; Cl, 10.07%). III was converted by chlorination and subsequent cyclization to quinolizidine derivatives, which were separated into two diastereoisomers, IVA and IVB, by alumina chromatography. The infrared spectrum of the isomer, IVA (eluted by 10% ether in petroleum ether, $[\alpha]_D$ −76.8°) was identical with that of natural l-deoxynupharidine[4], while the infrared spectrum of the other isomer, IVB (eluted by 15% ether in petroleum ether), was identical with that of rac-7-epi-deoxynupharidine[5]. Therefore, the absolute configuration of nupharamine should be represented by Formula I.



Department of Chemistry
Faculty of Science
Osaka University
Nakanoshima, Osaka

---

[1] Y. Arata and T. Ohashi, *J. Pharmac. Soc. Japan*, **77**, 792 (1957).

[2] T. Ohashi, ibid., **79**, 729, 734 (1959).

[3] M. Kotake, I. Kawasaki, S. Matsutani, S. Kusumoto and T. Kaneko, *J. Chem. Soc. Japan, Pure Chem. Sec.* (*Nippon Kagaku Zasshi*), **84**, 169 (1963).

[4] M. Kotake, I. Kawasaki, T. Okamoto, S. Matsutani, S. Kusumoto and T. Kaneko, This Bulletin, 35, 1335 (1962).

[5] F. Bohlmann, E. Winterfeld, P. Studt, H. Laurent, G. Boroshewoki and K-M. Kleine, *Chem. Ber.*, **94**, 3151 (1961).