OXOAPORPHINE ALKALOIDS FROM *ROLLINIA PAPILIONELLA*

THOMAS T. DABRAH and ALBERT T. SNEDEN*

Department of Chemistry, Virginia Commonwealth University, Richmond, Virginia 23284

As part of a program to isolate potential antineoplastic agents from plants, an ethanolic extract of *Rollinia papilionella* Diels. (Annonaceae) was found to exhibit significant activity *in vivo* and *in vitro* against the P-388 lymphocytic leukemia (1). During the course of fractionation of this extract guided by cytotoxicity against the P-388 cell culture, three known oxoaporphine alkaloids—liriodenine, lanuginosine, and lysicamine—were isolated. These alkaloids are not the major cytotoxic constituents of *R. papilionella,* but this is apparently the first report of their isolation from a *Rollinia* species.

EXPERIMENTAL

PLANT MATERIAL.—Roots of *Rollinia papilionella* Diels. (B806512, PR45518) were collected in Peru in October 1975 and supplied by the Medicinal Plant Resources Laboratory, USDA, Beltsville, Maryland, where voucher specimens are preserved.

EXTRACTION AND ISOLATION.[1]—Dried, ground roots (7.1 kg) of *R. papilionella* were extracted with 95% ethanol (soxhlet), and the resulting extract was worked up by standard procedures (2). The alkaloids were obtained after several chromatographic steps and identified by standard spectral data; liriodenine (3,4) (57 mg), mp 272-274°(dec) [lit. (3) 271-275°(dec)]; ir: ($CHCl_3$) 1660 cm^{-1}, pmr (CF_3CO_2H) δ 6.68 (s, 2H), 7.59 (s, 1H), 7.81-8.95 (6H); ms: *m/e* 275, 247, 189; lanuginosine (2,5,6) (10 mg), mp 310°(dec) [lit. (5) 310-312°(dec)]; ir: ($CHCl_3$) 1662 cm^{-1}, pmr (CF_3CO_2H) δ 4.11 (s, 3H), 6.64 (s, 2H), 7.53 (s, 1H), 7.7-8.9 (5H); ms: *m/e* 305, 275, 247, 234, 176, 149; lysicamine (7) (8 mg), mp 208-210°(dec) [lit. (7) 210-211°(dec)]; ir: ($CHCl_3$) 1668 cm^{-1}, pmr ($CDCl_3$) δ 4.02 (s, 3H), 4.10 (s, 3H), 7.22 (s, 1H), 7.55-9.12 (6H); ms: *m/e* 291, 276, 248, 233, 205, 185.

ACKNOWLEDGMENTS

This work was supported by grant CA29221 from the National Cancer Institute and, in part, by grant IN-105D from the American Cancer Society.

Received 13 August 1982

LITERATURE CITED

1. R. I. Geran, N. H. Greenberg, M. M. McDonald, A. M. Schumacher, and B. J. Abbott, *Cancer Chemother. Rep.*, 3, (*Part 3*) 1 (1972).
2. S. M. Kupchan, M. I. Suffness, and E. M. Gordon, *J. Org. Chem.*, 35, 1682 (1970).
3. M. Tomita and H. Furukawa, *J. Pharm. Soc. Jap.*, 82, 1199 (1962).
4. I. R. C. Bick and C. K. Douglas, *Tetrahedron Lett.*, 1629 (1964).
5. M. Shamma and R. L. Castenson, In: "The Alkaloids," Vol. 14, R. H. F. Manske, ed., Academic Press, New York, 1973, p 233.
6. C. C. Hsu, R. H. Dobberstein, G. A. Cordell, and N. R. Farnsworth, *Lloydia,* 40, 152 (1977).
7. N. Katsui, K. Sato, S. Tobinaga, and N. Takeuchi, *Tetrahedron Lett.*, 6257 (1966).

[1]Full details of the isolation and identification of the compounds are available on request to the senior author.