

4. B.M. Howard, K. Clarkson, and R.L. Bernstein, *Tetrahedron Lett.*, 4449 (1979).
5. W. Fenical, *Food-Drugs Sea Proc.*, **4**, 388 (1976).
6. F.J. McEnroe and W. Fenical, *Tetrahedron*, **34**, 1661 (1978).
7. G. Cimino, S. de Stefano, and L. Minale, *Tetrahedron Lett.*, **28**, 1315 (1972).
8. G. Cimino, S. de Stefano, and L. Minale, *Experientia*, **28**, 1401 (1972).
9. Identified from W.G. Van Name, *Bull. Am. Mus. Nat. Hist.*, **84**, 1 (1945).
10. G.D. Manners and L. Jurd, *J. Chem. Soc. Perkin I*, 405 (1977).
11. W.S. Bowers and R. Martinez-Pardo, *Science*, **197**, 1369 (1977).
12. W.S. Bowers, T. Ohta, J.S. Cheere, and P.A. Marsella, *Science*, **193**, 542 (1976).

Received 23 June 1983

FURANOCOUMARINS FROM *MAQUIRA CALOPHYLLA*

JOAN M. ROVINSKI and ALBERT T. SNEDEN*

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

Fractionation of an ethanolic extract of *Maquira calophylla* (P. & E.) C.C. Berg (Moraceae) for cytotoxic constituents yielded three known coumarins, marmesin, oxypeucedanin hydrate, and pranferol, from noncytotoxic fractions. Although these coumarins have been isolated from other genera of the Moraceae family (1), this is the first report of their isolation from a *Maquira* species.

EXPERIMENTAL

PLANT MATERIAL.—Stem bark of *M. calophylla* (B805592, PR46135) was collected in Peru in December 1975, and authenticated by the Medicinal Plant Resources Laboratory, USDA, Beltsville, MD, through which voucher specimens are preserved.

EXTRACTION AND ISOLATION.—The dried, ground stem bark (10.6 kg) of *M. calophylla* was extracted and worked up by standard procedures (2). The coumarins obtained after several chromatographic steps were marmesin (60 mg), oxypeucedanin hydrate (14 mg), and pranferol (39 mg). Identification of the coumarins was achieved by comparison with reported spectral data (ir, pmr, uv, ms), by comparison with authentic samples (tlc, mmp), and by chemical conversions to known compounds (1-5).

Details of the isolation and structure elucidation may be obtained upon request to the senior author.

ACKNOWLEDGMENTS

This work was supported by a grant (CA 29221) from the National Cancer Institute, National Institutes of Health. We thank Dr. William Soine for providing authentic samples of marmesin, oxypeucedanin, and isoimperatorin from the sample collection of Dr. T.O. Soine.

LITERATURE CITED

1. S.A. Brown, J. Mendez, and R.D.H. Murray, "The Natural Coumarins, Occurrence, Chemistry, and Biochemistry," New York: John Wiley & Sons, Ltd., 1982, p. 509.
2. D. Statz and F.B. Coon, *Cancer Treat. Rep.*, **60**, 999 (1976).
3. Q.N. Porter and J. Baldas, "Mass Spectra of Heterocyclic Compounds," New York: John Wiley & Sons, Ltd., 1971, pp. 147-155.
4. W. Steck and M. Mazurek, *Lloydia*, **35**, 418 (1972).
5. J. Mendez and J. Rubido, *Planta Med.*, **36**, 219 (1979).

Received 17 June 1983