FUROCOUMARINS FROM THE FRUIT OF *AMMI VISNAGA*

PHILIP W. LE QUESNE,* MUU N. DO,

Department of Chemistry, Northeastern University, Boston, MA 02115

MOHAMMAD IKRAM,* M. ISRARKKHAN, and I. MIR

Pakistan Council of Scientific and Industrial Research Labs, Peshawar, Pakistan

Chemical examination of the fruits of *Ammi visnaga* L. collected in Pakistan has led to the isolation of two furocoumarins, namely, 9-methoxy-7H-furo(3,2-g) (1) benzopyran-7-one (xanthotoxin) and 9-[(3-methyl-2-butenyl)oxy]-7H-furo-(3,2-g) (1) benzopyran-7-one (ammidin). These compounds have not been previously isolated from *A. visnaga*. Their uv, ir, ^{1}H- and ^{13}C-nmr spectra agreed with the reported data (1-3).

EXPERIMENTAL

PLAND MATERIAL.—The whole plants of *A. visnaga* were collected near Peshawar, Pakistan, and identified by Mr. Shahid Farooq, taxonomist, PCSIR Laboratories, Peshawar. A voucher specimen is deposited in the Herbarium of PCSIR Laboratories.

EXTRACTION AND ISOLATION.—The dried, powdered fruits of *A. visnaga* (800 g) were extracted (Soxhlet) with petroleum ether (60-80°). The extract was concentrated, filtered, and dissolved in MeOH. After decolorization with charcoal, the MeOH was removed and the residue crystallized from hexane to give xanthotoxin (0.2 g), mp 101-102°.

The remaining plant material was then extracted with EtOH. The solvent was removed and the residue dissolved in 10% HCl. The solution was basified with NH_3 and extracted with $CHCl_3$. The $CHCl_3$ extract was decolorized, dried, and solvent was removed in vacuo. The crude product was crystallized from MeOH to give ammidin (0.105 g), mp 129-130°.

The coumarins were identified by standard spectral data as well as by comparison with corresponding published data (2;3).

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

ACKNOWLEDGMENTS

We are grateful to the NSF-sponsored Northeastern Regional NMR Facility at Yale University (Grant Number CHE-7916210) for nmr spectra and to Mr. Hamdy Maksoud (NU) for mass spectra.

LITERATURE CITED

1. R.D.H. Murrah, J. Mendez, and S.A. Brown, "The Natural Coumarins: Occurrence, Chemistry and Biochemistry," John Wiley & Sons, Ltd., New York, 1982, p. 544 (and references cited therein).
2. W. Steck and M. Mazurek, *Lloydia*, **45**, 418 (1972).
3. M.H.A. Elqamal, N.H. Elewa, E.A.M. Elhrusy, and H. Dudek, *Phytochemistry*, **13**, 149 (1979).

Received 19 March 1984

3-*O*-ACETYLCYCLOART-23-EN-25-OL FROM THE ROOTS OF *SAPIUM INSIGNE*

SANTOSH K. SRIVASTAVA and VINOD K. AGNIHOTRI

Department of Chemistry, University of Saugar, Sagar, M.P., 470.003, India

Sapium insigne Trimen has been used in Indian folk medicine for various ailments (1), but no chemical investigation has been made so far on its roots. We have isolated and characterized 3-*O*-acetylcycloart-23-en-25-ol from this plant.

The isolated compound gave all the positive tests for a triterpenoid. It was unchanged on treatment with Ac_2O/C_5H_5N at room temperature (24 h), but acetylation (Ac_2O/C_5H_5N) at reflux temperature (6 h)