

Leaf and stem. (150 g) Isolation by standard procedures² gave 19 mg unedoxide (0.01 %), identified as described above, and a mixture of other iridoids. Column chromatography of the mixture on silica gel (*n*-BuOH-MeOH-H₂O, 4 : 1 : 5) followed by gel filtration on Sephadex afforded 80 mg of a pure amorphous compound. The structure of this apparently new iridoid (m.p. of acetate: 140–142°) is now under investigation.

Voucher specimens are deposited in WE Pharmakognosie der Freien Universität Berlin.

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DICOTYLEDONAE

IRIDACEAE

ISOFLAVONES OF *IRIS KUMAONENSIS* AND *I. GERMANICA*

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Key Word Index—*Iris kumaonensis*; *I. germanica*; Iridaceae; isoflavones; iridin; irisolone.

Plant. *Iris kumaonensis* Wall. and *I. germanica* L. *Occurrence.* *I. kumaonensis*. Western Himalayas, from Kashmir to Kumaon, 8000–12 000 ft. *I. germanica*. Cultivated in Kashmir Valley. *Uses.* Medicinal.¹ *Previous work.* *I. kumaonensis*. None. *I. germanica*, Essential oil,¹ a C-glycosyl flavone² and an isoflavone glucoside.³

I. kumaonensis. Defatted, EtOH extract of whole plant (dry, 390 g) on concentration yields, 7-(glucosyloxy)-5,3'-dihydroxy-6,4',5'-trimethoxyisoflavone (iridin,³ 15 g), m.p., UV, IR, *m/e* 522 (M⁺) and NMR, diacetate, m.p. and UV; acid hydrolysis to 5,7,3'-trihydroxy-6,4',5'-trimethoxyisoflavone (irigenin^{3,4}), m.p., UV, IR, *m/e* 360 (M⁺) and NMR (2-H, 2.05 τ ; CDCl₃), triacetate, m.p. and UV, and glucose, PC.

¹ R. N. CHOPRA, S. L. NAYAR and I. C. CHOPRA, *Glossary of Indian Medicinal Plants*, p. 143, C.S.I.R., New Delhi (1956).

² A. KAWASE and K. YAGESHETA, *Agric. Biol. Chem. Tokyo* 32(4), 537 (1968).

³ W. BAKER, *J. Chem. Soc.* 1022 (1928).

⁴ W. BAKER *et al.*, *Tetrahedron Letters* 5, 6 (1960).

I. germanica. CHCl_3 extract of defatted, vacuum dried MeOH extract of rhizomes (dry, white flowered variety) on concentration yields, 4'-hydroxy-5-methoxy-6,7-methylene-dioxyisoflavone (irisolone^{5,6}), m.p., IR, UV, m/e 312 (M^+), NMR (2-H, 1.94 τ , $\text{C}_5\text{D}_5\text{N}$), and m.m.p., acetate, m.p., IR and NMR, hydrated methyl ether, m.p. and UV, anhydrous methyl ether, m.p., m.m.p. and UV.

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⁵ K. W. GOPINATH, A. R. KIDWAI and L. PRAKASH, *Tetrahedron* **16**, 201 (1961).

⁶ K. FUKUI and T. MATSUMATO, *Bull. Chem. Soc. Japan* **38**, 887 (1965).