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LEGUMINOSAE

GIBBERELLIN A_{18} AND A_{23} FROM IMMATURE SEEDS OF *WISTARIA FLORIBUNDA*

KOICHI KOSHIMIZU, HIROO ISHII*, HIROSHI FUKUI and TETSUO MITSUI
Department of Food Science and Technology, Faculty of Agriculture, Kyoto University, Kyoto 606, Japan

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Key Word Index—*Wistaria floribunda*; Leguminosae; gibberellins A_{18} and A_{23}.

Plant. Wistaria floribunda DC. *Source.* Nara Park, Nara, Japan, July 1967.† *Previous work.* The existence of gibberellin-like substances in the immature seeds.[1]

Isolation and identification.‡ MeOH extracts obtained from the immature seeds (17 kg) were concentrated and the residue was partitioned between benzene and H_2O at pH 3. To the resulting aqueous layer, charcoal was added, and substances adsorbed eluted with 70% aq. acetone. Evaporation of the eluant gave a gum (140 g), which was purified by adsorption and partition chromatography to give two crystalline compounds, I and II.

Compound I (yield: 17·3 mg), colourless needles, m.p. 179–181° (from H_2O), exhibited strong activity on the growth of rice seedlings. IR spectrum (KBr): 3500, 3350, 2800–2400 br, 1730–1690 br, 1660 sh. and 900 cm^{-1}. NMR spectrum (60 MHz, d_5-pyridine): 1·95δ (3H, *s*), 3·58δ (1H, *d*, $J = 13$ Hz), 3·98δ (1H, *d*, $J = 13$ Hz), 4·50δ (1H, *m*), 5·00δ (1H, *m*) and 5·57δ (1H, *m*). Methylation of I gave a methyl ester, whose NMR spectrum (60 MHz, $CDCl_3$): 1·21δ (3H, *s*), 2·06δ (2H, *br. s*), 2·76δ (1H, *d*, $J = 12·5$ Hz), 3·67δ (3H, *s*), 3·75δ (3H, *s*), 3·90δ (1H, *d*, $J = 12·5$ Hz), 4·11δ (1H, *m*), 4·95δ (1H, *m*), 5·18δ (1H, *m*) and 9·72δ (1H, *s*). The data here reported were in full agreement with those known for GA_{23}[2,3] and the identity was confirmed by comparison with an authentic sample (IR, NMR, co-TLC and m.m.p.).

Compound II (yield: 22·3 mg), colourless needles, m.p. 235–239° (from acetone) was less active than I. IR spectrum (KBr): 3340, 3260, 2800–2400 br, 1695 br and 908 cm^{-1}. NMR spectrum (60 MHz, d_5-pyridine): 1·26δ (3H, *s*), 2·00δ (3H, *s*), 3·12δ (1H, *d*, $J = 12$ Hz), 4·26δ (1H, *d*, $J = 12$ Hz), 4·78δ (1H, *m*), 5·04δ (1H, *m*) and 5·53δ (1H, *m*). The spectral evidence indicated compound II to be GA_{18}[4] and the identity was confirmed by comparison with an authentic sample (IR, NMR, co-TLC and m.m.p.).

* Present address: Research Laboratories, Dainippon Pharmaceutical Co. Ltd., Suita, Japan.

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‡ The extraction and purification of gibberellins were guided by a gibberellin bioassay using rice seedlings. For more complete experimental details about gibberellin bioassay and isolation procedure, see Refs. 3 and 4.

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