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C-Glucosylflavones in the Genus *Ornithogalum*

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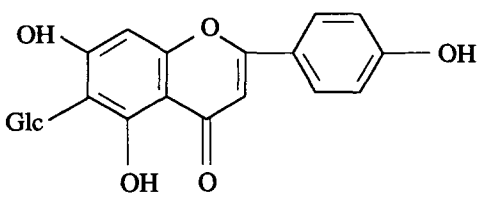
Key Word Index—*Ornithogalum*; Liliaceae; *C*-glucosylflavones.

Abstract—Two *C*-glycosylflavones are identified in three taxa of *Ornithogalum*; isovitexin and isovitexin-7-X″-di-*O*-glucoside.

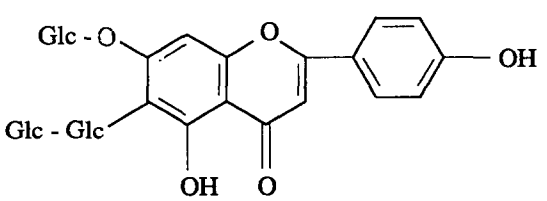
Aerial parts of three taxa of *Ornithogalum*: *O. algeriense* Jord. et Four., *O. kochii* Parl. and *O. umbellatum* L., were studied in order to determine characteristic taxonomic markers among flavonoid compounds. The leaves of *O. algeriense* were found to contain compounds **1** and **2**, respectively identified as isovitexin and isovitexin-7-X″-di-*O*-glucoside. **1** and **2** were also found in EtOH extracts of fresh leaves of *O. kochii* and *O. umbellatum* analysed by TLC. Isovitexin-7-2″-di-*O*-glucoside has previously reported in different species in the Caryophyllaceae: *Cerastium arvense* [1] and *Stellaria media* [2] but not in the genus *Ornithogalum*. The occurrence of isovitexin has already been noted in *O. gussonei* Ten [3]. Bandyukova [3] also found saponarin in this species. No saponarin was found in the three taxa studied by TLC analysis. We did not find any difference in the flavonoid composition of the three taxa studied here. **1** and **2** cannot be considered as taxonomic markers at the specific level.

Experimental

Fresh leaves of *O. algeriense* were boiled in 80% EtOH for 1 h. The hot solution was filtered and concentrated *in vacuo*. The residue, diluted with water, was extracted with Et_2O, EtOAc and BuOH. No flavonoids were detected in the Et_2O extract. EtOAc extract was chromatographed by silica gel column with EtOAC-MeOH (9/1, v/v). This led to the isolation of compound **1**, identified as isovitexin according to UV and ^{1}H-NMR spectra.



(1)



(2)

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The BuOH extract was chromatographed on a cellulose column with water and Sephadex LH 20 with MeOH for the isolation of compound **2**, identified as isovitexine 7-X″-di-*O*-glucoside according to UV spectrum, partial hydrolysis (acid, enzymic with rhamnodiastase) of **2** and ^{1}H-NMR spectrum after acid hydrolysis.

For **1**, spectral data were identical to those of an authentic sample of isovitexin. For **2**: UV, λ_{max}, nm: MeOH: 276, 335; +NaOMe: 281, 300 sh, 376; +$AlCl_3$: 261, 283, 300, 344, 386; +$AlCl_3$/HCl: 260, 283, 300, 340, 386; +NaOAc: 280, 292 sh, 380; +NaOAc/H_3BO3: 277, 340. Acid hydrolysis (2 N H_2SO_4, 1 h) produced glucose and **1** (identified by UV and ^{1}H-NMR spectra). Enzymic hydrolysis (rhamnodiastase) led to a diglucoside with a 7-hydroxyl group. UV, λ_{max}, nm: MeOH: 271, 334; +NaOME: 278, 332, 398; +$AlCl_3$: 278, 304, 350, 382; +$AlCl_3$/HCl: 279, 303, 346, 386; +NaOAc: 278, 306 sh, 388; +NaOAc/H_3BO_3: 273, 354.

References

1. Dubois, M. A., Zoll, A., Bouillant, M. L. and Favre-Bonvin, J. (1982) *Bulletin de Liaison du Groupe Polyphénols* **10**, 325.
2. Budzianowski, J. and Pakulski, G. (1988) 36th Annual Congress on Medicinal Plant Research (Freiburg), **19** (poster).
3. Bandyukova, V. A. (1979) *Chem. Nat. Compd* **15**, 5.