

IRIDOID GLUCOSIDES OF *PINGUICULA VULGARIS*JOSE L. MARCO<sup>1</sup>*Instituto de Química Orgánica General, CSIC, Juan de la Cierva, 3 28006-Madrid, Spain*

*Pinguicula vulgaris* L. (Lentibulariaceae) is an insectivorous plant that grows in damp places and is well known for its purgative effects (1). The occurrence of benzoic and *trans*-cinnamic acids (2) and flavonoids have been previously reported in this plant.

This work deals with the identification of the known iridoid glucosides globularin (4), globularicisin (5), scutellarioside-II (6), and 1-*O*-*p*-cumaroyl- $\beta$ -D-glucopyranoside (7) from the whole plant of *P. vulgaris*. This is the first time that iridoid glucosides have been found in *Pinguicula* species.

## EXPERIMENTAL

**PLANT MATERIAL.**—Material was collected in June 1982, at Rodiezmo, León, Spain. Voucher specimens are deposited in the Herbarium of the Faculty of Pharmacy, Madrid "Complutense" University.

**ISOLATION AND IDENTIFICATION.**—Dried and powdered whole plant material (920 g) was extracted with Me<sub>2</sub>CO (5 liters) at room temperature for 2 weeks. Removal of the solvent gave 80 g of extract, which was chromatographed on silica gel (Merck, no. 7734) using gradients of *n*-hexane-EtOAc and CHCl<sub>3</sub>-MeOH. Globularin and globularicisin (25 g) were isolated as an amorphous powder, as a single spot in tlc, in a ratio of 4:1, as determined by integration of the olefinic protons in the <sup>1</sup>H-nmr spectrum. These were separated as previously described (5). The mixture eluted with CHCl<sub>3</sub>-MeOH (1:2), free of acetates by <sup>1</sup>H-nmr inspection, was fully acetylated and submitted to chromatography; elution with *n*-hexane-EtOAc (3:1) yielded 300 mg of pentaacetyl-1-*O*-*p*-cumaroyl- $\beta$ -D-glucopyranoside, mp 158-161° (EtOH); [ $\alpha$ ]<sup>25</sup><sub>D</sub> -27.16° (c 0.54, CHCl<sub>3</sub>), and 430 mg of hexaacetyl-scutellarioside-II, amorphous; [ $\alpha$ ]<sup>25</sup><sub>D</sub> -81.95° (c 100, CHCl<sub>3</sub>).

All compounds gave satisfactory analytical, physical, and spectroscopic data (mp, mmp, ir, <sup>13</sup>C nmr) in full agreement with the reported values (5-7).

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

## ACKNOWLEDGMENTS

The author thanks Dr. J. Borja, Department of Botany, Faculty of Pharmacy, Madrid, for the collection and botanical classification of the plant material.

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Received 13 September 1984

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