

GLYCOALKALOIDS OF *SOLANUM PLATANIFOLIUM*

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Key Word Index — *Solanum platanifolium*; Solanaceae; solasonine; solasodine; solamargine.

Previous work. Solasodine (1.93%) from mature berries [1].

Solanum platanifolium Sims was examined for glycoalkaloids. The crude basic glycoalkaloids mixture isolated from roots, stems, leaves fruits and seeds afforded solasonine and a glucose-galactose-rhamnose containing glycoside of salasodine, the X-ray diffraction patterns of which did not tally with those of the known glycoalkaloids. In addition to these two compounds, the seeds and fruits also contained the glycoside solamargine.

EXPERIMENTAL

Isolation of glycoalkaloids. The dried powdered parts of the plants (1.5 kg) were macerated separately with 90% EtOH containing 2% AcOH, and the basic glycoalkaloids precipitated with NH₄OH at pH 9–10. The precipitates were dried and extracted with MeOH, the solvent evaporated under vacuum and the glycoalkaloidal mixture obtained, chromatographed on Al₂O₃, eluting with H₂O-satd-*n*-BuOH [2]. Three crystalline fractions were obtained and examined by TLC. This was carried out on E'Merck Si gel G, using CHCl₃–EtOH–NH₄OH (2:2:1%) (system I) [3] and Dragendorff's reagent as spray. The sugars were examined by paper chromatography with the conventional ascending technique using a mixture of BuOH–C₆H₅N–H₂O (6:4:3) (system II) and

a solution of aniline hydrogen phthalate as spray reagent.

Fraction I. R_f, 0.34 (system I), mp 292–95°; [α]_D²⁵ –119°; hydrolysis with alcoholic HCl (2 ml of conc acid per 10 ml EtOH) yielded solasodine hydrochloride, mp, 310–315°. The acid solution contained glucose, galactose and rhamnose, which were identified by co-chromatography (system II). X-ray diffraction patterns of the glycoalkaloid did not tally with that of any known compound; hence this is tentatively designated as "solatifoline". Structure elucidation is in progress.

Fraction II (solasonine). R_f 0.19 (system I), mp 280–285°; [α]_D²⁵ –75° (pyridine), identified by mmp, TLC, IR, hydrolysis products and X-ray diffraction studies.

Fraction III (solamargine). R_f 0.60 (system I) mp 242–245°; [α]_D²⁵ –98 (C₆H₅N), identified by mmp, TLC, IR, hydrolysis products and X-ray diffraction patterns.

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