

A NEW FLAVONOL GLYCOSIDE FROM THE FLOWERS OF *SOLANUM XANTHOCARPUM*

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Although *Solanum xanthocarpum* is of some medicinal value there has been no previous chemical examination of the flowers. In the present work, apigenin [1] was identified in the petals and a new flavonol diglycoside and sitosterol were isolated from the stamens. The identity of apigenin and sitosterol was confirmed by standard procedures.

The new flavonol glycoside, $C_{27}H_{32}O_{19}$, mp 184°, gave the characteristic colour reactions of a flavonol [2, 3] and on hydrolysis with 10% ethanolic H_2SO_4 gave quercetin and a disaccharide, the component sugars of which were glucose and mannose. Glucose was confirmed by co-chromatography and by the preparation of its phenylosazone, mp 204° (lit. 205°); mannose was confirmed by mp 131°, $[\alpha]_D^{30} + 13.9^\circ$ (water), co-chromatography and by the preparation of its phenylhydrazone, mp 196° (lit. 199–200°) and *N*-glycosyl aminobenzoic acid, mp 179° (lit. 181°). Periodate oxidation indicated that both sugars in the disaccharide had the pyranose configuration; 3.4 mol of periodate were consumed with the liberation of 1.3 mol of formic acid. On methylation of the glycoside [4] followed by hydrolysis, two methylated sugars were identified in the hydrolysate, viz. 2,3,6-tri-*O*-methyl-D-mannose and 2,3,4,6-tetra-*O*-methyl-D-glucose, indicating that C_1 of the mannose is linked with the C_3 -OH of the aglycone and that C_4 of the mannose is attached to C_1 of the glucose.

Only glucose could be identified in the aqueous hydrolysate obtained after acid hydrolysis, indicating that glucose occupies the terminal position. The position of the disaccharide molecule at position -3 was confirmed by the ready H_2O_2 oxidation of the glycoside in dilute NH_4OH and was further confirmed by acid hydrolysis of the methylated glycoside. The methylated aglycone hydrolysate, mp 192–93°, was identified as 5,7,3',4'-tetra-*O*-methylquercetin by co-chromatography with an authentic compound obtained similarly from quercetin-3-glycoside. Since the glycoside failed to reduce Fehling's solution and also did not give a test with aniline hydrogen phthalate, the glucose molecule must be linked to mannose through its reducing group. Hydrolysis of the glycoside with emulsin gave glucose and mannose, indicating a β -linkage between the two sugar units in the disaccharide as well as between the aglycone and mannose.

Thus, the original glycoside is quercetin-3-*O*- β -D-glucopyranosyl-*O*- β -D-mannopyranoside.

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GOMPHRENOL, A NEW METHYLENEDIOXYFLAVONOL FROM THE LEAVES OF *GOMPHRENA GLOBOSA* (AMARANTHACEAE)

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INTRODUCTION

In a previous paper [1] two of us reported results on the role of phenolic compounds in the hypersensitive reaction of *Gomphrena globosa* infected with tomato bushy stunt virus. In the course of screening the phenolic constituents of the healthy plant, we have isolated, in addition to a number of common phenolics, a flavonol

(1a), which was present in considerable amount and did not correspond to any of the known structures [2]. We describe here the identification of this new compound, the only flavonoid present in *G. globosa* leaves. Previous phytochemical knowledge on *G. globosa* is restricted to the identification of several betacyanins, from both flowers and leaves [3] [4].