FLAVOSORBIN – A NEW GLYCOSIDE FROM *Sorbaria sorbifolia*

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An account has been given previously [1, 2] of the isolation of nine flavonoid glycosides from the flowers and leaves of Sorbaria sorbifolia (L.) A. Br. (Ural false spirea). The structures of eight of them have been established. The ninth glycoside (substance IX), $C_{27}H_{30}O_{14}$, with mp 244-247°C, $[\alpha]_D^{20}$ −140° (c 0.16; dimethylformamide) has been shown to have as the carbohydrate component the biose O-α-L-rhamnopyranosyl-(4 → 1)-β-D-xylopyranose, identical with the sugar moiety of sorbifolin [1]. The structure of the aglycone was not determined definitively.

In a further study of substance (IX), it was found that solutions of the glycoside and of the aglycone in absolute ethanol did not give a green coloration with sodium ethoxide (Bargellini reaction) [3]. This shows the absence from the substance of three free vicinal hydroxyls, as in scutellarein [1]. The IR spectrum shows an absorption band in the 2857 cm^{-1} region which is characteristic for an OCH_3 group.

After demethylation with hydriodic acid in acetic anhydride and liquid phenol [4], the aglycone obtained from this substance ($C_{16}H_{12}O_6$, mp 290-292°C) was converted into scutellarein. From qualitative reactions and UV spectra, the aglycone of flavosorbin was identified as 7-O-methylscutellarein [4, 5].

The site of addition of the carbohydrate component to the aglycone was determined by UV spectroscopy with diagnostic reagents [6, 7].

Both in the glycoside and in the aglycone, phenolic hydroxy groups were found in positions 4' and 5, which shows the attachment of the carbohydrate component at C_6. This position in flavonoids is the most difficult to determine by UV-spectral analysis.

Thus, the structure of flavosorbin can be represented as 7-O-methylscutellarein 6-O-[O-β-D-xylopyranosyl-(1→4)-α-L-rhamnopyranoside].

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