

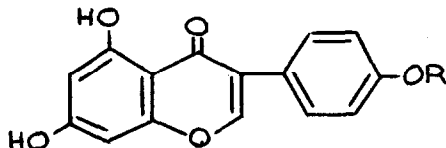
THE STRUCTURE OF SOPHORABIOSE.

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Two isoflavone glycosides have been isolated from the fruits of Sophora japonica L. One is sophoricoside, described by G. Oharsux and J. Rabaté¹, the other is sophorabioside, isolated by G. Zemplén and R. Bognár². Sophoricoside is genistein-4'- β -D-glucoside³ /Ia/; this structure has been confirmed by synthesis /R. Bognár and V. Szabó⁴/. Sophorabioside was shown to be a genistein-4'- β -D-rhamnoglucoside. The disaccharide component proved to be different from rutinose and was named sophorabiose. The point of attachment of rhamnose to glucose has not been established, but sophorabiose was supposed to be identical with neohesperidose⁵.



Ia R= β -D-glucosyl

Ib R= β -neohesperidosyl

In the present investigation sophorabioside was subjected twice to total methylation according to R. Kuhn and H. Trisch-

mann⁶ //OH₃/₂SO₄, BaO, Ba/OH/₂, HCON/OH₃/₂, 20°. Hydrolysis of the totally methylated glycoside /OCH₃ 35.1%, calc. for C₂₇H₂₂O₆/OCH₃/₈ 36.0%/ afforded genistein-5,7-dimethylether of m.p. 265-267° /lit². 266-266.5°/ and a mixture of partially methylated glucose and rhamnose. This latter was investigated by thin-layer chromatography /Kieselgel G, Merck; C₆H₆-EtOH 6:1; development with aniline phtalate/. Co-chromatography with samples of authentic 2,3,4-tri-O-methyl-L-rhamnose and 3,4,6-tri-O-methyl-D-glucose⁸, as well as with a mixture of them prepared by total methylation of neohesperidin revealed the presence of 2,3,4-tri-O-methyl-L-rhamnose /Rf: 0.55, greenish-grey/ and 3,4,6-tri-O-methyl-D-glucose /Rf: 0.30, red-brown/.

Thus sophorabiose is identical with neohesperidose⁷/2-O- α -L-rhamnopyranosyl-D-glucopyranose/ and sophorabioside is genistein-4'- β -D-neohesperidoside /Ib/.

Similar to neohesperidin sophorabioside has a bitter taste.

Isolation of the intact disaccharide moiety by ozonolysis of the glycoside is in progress.

⁸ Thanks are due to Drs. H. G. Fletcher jr. /Bethesda, U.S.A./, P.A.J. Gorin /Saskatoon, Canada/ and R. M. Horowitz /Pasadena, U.S.A./ for samples of methylated sugars.

References.

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