

CRYSTALLINE NEOHESPERIDOSE

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Neohesperidose (2-O- α -L-rhamnopyranosyl-D-glucopyranose) has been found in nature in the form of various glycosides and is of particular interest in view of its occurrence as the sugar portion of the citrus bitter principles naringin, neohesperidin and poncirin (1). Previous attempts to obtain the sugar either from a natural product (2) or by synthesis (2,3) have resulted only in the isolation of the β -hepta-acetate. Improved methods of synthesis have recently resulted in the preparation of this derivative in an over-all yield of 18% from D-glucose (4) and deacetylation in 0.4% sodium methoxide solution has now led to the isolation of the free sugar as the β -monohydrate.

After standing for several weeks at room temperature, colourless prisms were deposited from an aqueous 95% ethanolic solution of the sugar which was pure by thin layer and paper chromatography. The compound, after two recrystallizations and vacuum drying to constant weight at 30°, had m.p. 191-192°; $[\alpha]_D^{22}$ -53.3° (7 min, c 3.0 in water) \rightarrow -3.9° (6 hr, constant value). Further recrystallization did not change these values. Vacuum drying at 60° for 2 hr resulted in a further reduction in weight corresponding to the loss of one molecule of water of crystallization (Found: C, 44.4; H, 6.7. $C_{12}H_{22}O_{10}$ requires C, 44.2; H, 6.7%).

Although neohesperidose is associated with intense bitterness in some compounds and sweetness in others (5), aqueous solutions of the pure sugar are completely tasteless.

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