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Note

1-*O*-Formyl-β-D-glucopyranose tetra-acetate

LESLIE HOUGH AND ANTHONY W. LEWIS

Department of Chemistry, Queen Elizabeth College (University of London), Campden Hill Road, London W8 7AH (Great Britain)

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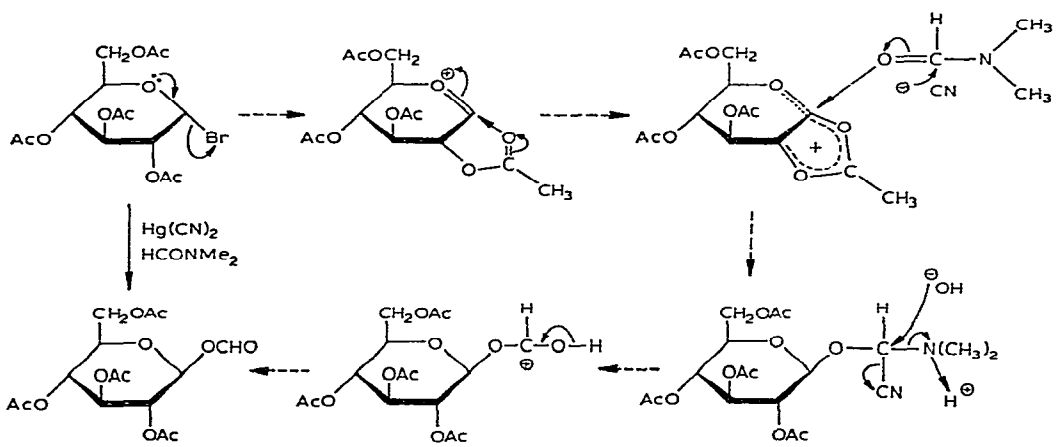
The synthesis of glycosides of methyl 18-β-glycyrrhetate by a modification of the Koenigs–Knorr synthesis, as described by Miescher and Meystre[1] for the synthesis of steroid glycosides, gave low yields. Thus, the preparation of methyl 18-β-glycyrrhet-3-β-yl 2,3,4,6-tetra-*O*-acetyl-β-D-glucopyranoside, previously described by Mustafa and Fayez[2], gave the desired glycoside in 32% yield.

We investigated the possibility of using an alternative solvent to achieve improved yields of the acetylated glycoside. With *N*,*N*-dimethylformamide, no condensation between methyl 18-β-glycyrrhetate and 2,3,4,6-tetra-*O*-acetyl-α-D-glucopyranosyl bromide was observed at room temperature using mercuric cyanide as the acid acceptor. However, under these conditions, 2,3,4,6-tetra-*O*-acetyl-α-D-glucopyranosyl bromide was converted into 2,3,4,6-tetra-*O*-acetyl-1-*O*-formyl-β-D-glucopyranose (24% yield), m.p. 121–123°, $[\alpha]_D^{18}$ +8°; lit.[3], m.p. 121°, $[\alpha]_D^{16}$ +6°; the ^{1}H-n.m.r. spectrum showed a sharp singlet at τ 2.2 which could be assigned to the formyl proton. The bromide did not react with *N*,*N*-dimethylformamide in the absence of mercuric cyanide. The formic ester probably arises by a reaction scheme outlined below.



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