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(4*R*)-1'-Acetyl-2,3-*O*-isopropylidene-methylspiro [4,6-dideoxy-ß-D-*ribo*-hexopyranosid-4,5'-imidazolidin]-2',4'-dione

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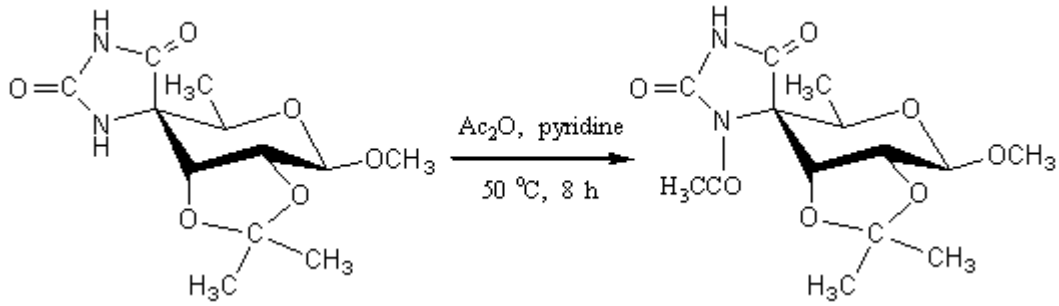

Acetylation of hydantoins (imidazolidin-2,4-diones) and their 5-substituted derivatives normally occurs more readily in the 1-position [1]. A mixture of (4*R*)-2,3-*O*-isopropylidene-methylspiro[4,6-dideoxy-ß-D-*ribo* -hexopyranosid-4,5'-imidazolidin]-2',4'-dione [2] (0.86 g, 3 mmol), acetic anhydride (2.5 ml) and dry pyridine (5 ml) was heated at 50 °C for 8 h followed by concentration and co-evaporation with toluene under diminished pressure to give the crude product. This was purified on a column of silica gel using $CHCl_3$/MeOH 4:1 as an eluent. The fractions with R_f 0.35 were collected and evaporated to afford the title compound (0.87 g, 89%) as a colourless oil which solidified on standing.

M.p. 98-99 °C.

$[a]_D$ 8° (c = 10 mg.cm^3, methanol).

TLC ($CHCl_3$/MeOH 4:1, silica gel) R_f 0.35.

^{1}H-NMR ($CDCl_3$): 5.26 (q, J=6.5 Hz, 1H, H-5); 4.54 (d, J=7.3 Hz, 1H, H-1); 4.37 (d, J=5.7 Hz, 1H, H-3); 4.27 (dd, J=7.3 and 5.7 Hz, 1H, H-2); 3.56 (s, 3H, OMe); 2.58 (s, 3H, COMe); 1.53 and 1.33 (2s, 2 x 3H, CMe_2); 1.27 (d, J=6.5 Hz, 3H, H-6).

^{13}C-NMR ($CDCl_3$): 169.9, 169.5 and 153.5 (3 x C=O), 111.0 ($\underline{C}Me_2$), 103.5 (C-1), 76.3 (C-2), 76.2 (C-3), 70.2 (C-4), 68.0 (C-5), 57.2 (OMe), 27.6 and 25.8 ($C\underline{Me}_2$), 27.0 (CO$\underline{Me}$), 14.8 (C-6).

CI-MS (70 eV, pyridine): *m/z* 408 (100%, $[M + C_5H_5NH]^+$).

Anal. calc. for $C_{14}H_{20}N_2O_7$ (328.32): C 51.22, H 6.14, N 8.53; found: C 51.11, H 6.18, N 8.59.

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References

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2. Koos, M.; Steiner, B.; Langer, V.; Gyepesova, D.; Durik, M. *Carbohydr. Res.*, in press.

Sample availability: Available from authors.