Supplementary Material (ESI) for Chemical Communications

SUPPORTING INFORMATION

Deacylation Studies on Furanose Triesters Using an Immobilized Lipase: Synthesis of a Key Precursor for Bicyclonucleosides

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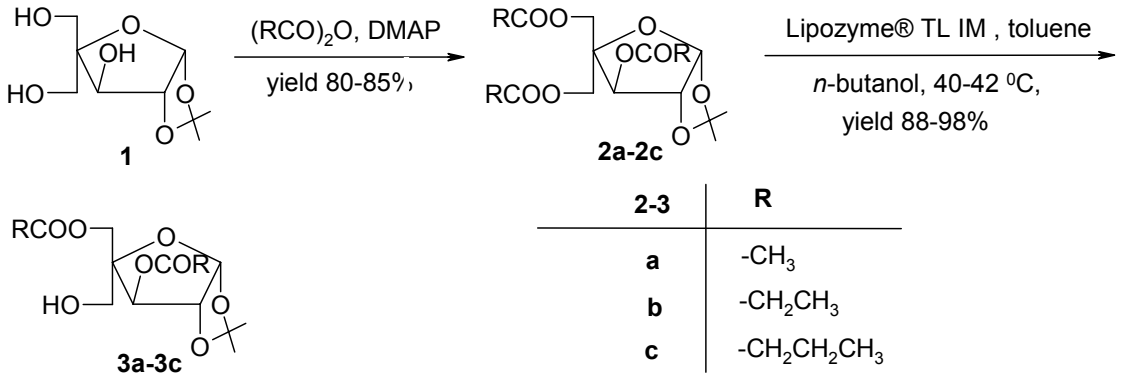

General procedure for acylation of 4-*C*-hydroxymethyl-1,2-*O*-(1-methylethylidene)-*β*-L-*threo*-pentofuranose (1); Preparation of triesters 2a-2c: To a mixture of 4-*C*-hydroxymethyl-1,2-*O*-(1-methylethylidene)-*β*-L-*threo*-pentofuranose (**1**) and the corresponding acid anhydride (acetic/propanoic/butanoic anhydride, 3.3 equiv.) was added catalytic amount of DMAP and the reaction mixture was stirred for 4-5 h at 28 °C. On completion (analytical TLC), the reaction mixture was poured over ice water and the product triester was extracted with ethyl acetate (2 x 60 ml). The combined organic extract was washed with saturated aqueous $NaHCO_3$ (50 ml), dried over anhydrous Na_2SO_4, and the solvent was removed under reduced pressure. The residue thus obtained was purified by column chromatography on silica gel using 25 % ethyl acetate in petroleum ether (v/v) as eluent to afford the triacylated products **2a**-**2c** in 80-85 % yields.

General procedure for lipase-catalyzed selective deacylation of 4-*C*-acyloxymethyl-3,5-di-*O*-acyl-1,2-*O*-(1-methylethylidene)-*β*-L-*threo*-pentofuranose (2a-2c): To a solution of the triacylated furanose **2a**-**2c** (3.0 mM) in anhydrous toluene (30 ml) was added *n*-butanol (1.2 equiv), followed by the addition of Lipozyme® TL IM immobilized on silica (500 mg). The reaction mixture was stirred with shaking at 40-42 °C in an incubator and the progress of the reaction monitored periodically by TLC. On completion, the reaction was quenched by filtering off the lipase, the solvent was removed under reduced pressure, and the residue was purified by column chromatography on silica gel using 40-50 % ethyl acetate in petroleum ether (v/v) as eluent to afford the deacylated products **3a**-**3c** in 88-98 % yields.

PDF files of ^{1}H NMR and ^{13}C NMR of compounds **2a** – **2c** and **3a** - **3c** are attached herewith (12 PDF files).