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Towards the synthetic optimization of (3aR,6aR)-6-((benzyloxy)methyl)-2,2-dimethyl-3a,6a-dihydro-4H-cyclopenta[d][1,3]dioxol-4-one

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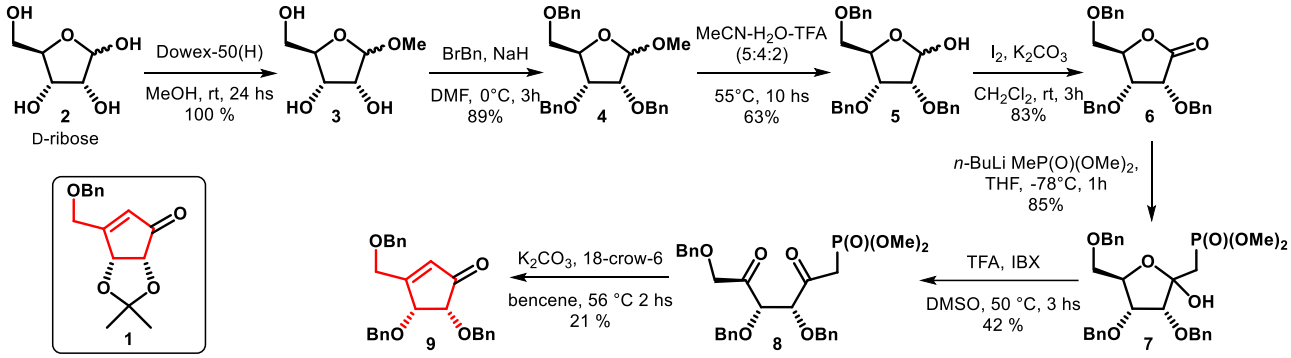
ABSTRACT

Cyclopentenone 1 is a key intermediate that has been used in the synthesis of multitude carbocyclic nucleosides of interest[1]. Although there are several synthesis strategies[2,3,4], most of them present different difficulties. These include low yields, isomerization, irreproducibility, and the use of non-green reagents such as chromium trioxide. Therefore, our objective is to optimize the synthetic sequence of **1**, or a potential analogue that is suitably protected. A novel synthetic strategy is presented herein, based on D-ribose, a cheap and abundant natural product. The proposed synthetic route involves the preparation of analogue **9**, where the isopropylidene protecting group is replaced by benzyl groups. The synthetic route is developed in 7 reaction steps, avoiding the use of adverse reagents and yielding an overall yield of 3,5%.



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