

THE USE OF PSE-GLUCAL AS A VERSATILE INTERMEDIATE TO ACCESS NOVEL DEOXY-, GLUCO-, AND MANNO-PYRANOSIDE DERIVATIVES

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Protecting groups are commonly used in carbohydrate chemistry as intermediate agents to ensure selective and specific reactions, and also for stereoisomeric control, so that they play a key role in the reactivity of carbohydrates. A few years ago, our research group introduced a protecting group in carbohydrate chemistry, the phenylsulfonyl ethylidene (PSE) acetal, which can easily be prepared through a Michael-type reaction of unprotected sugars under basic conditions [1,2]. Unlike most of cyclic acetal protecting groups, PSE acetal is stable under acidic conditions [2], and in contrast, can easily deprotect under basic conditions [3]. They can also selectively be opened under strongly reductive or basic conditions [2], or desulfonylated to produce ethylidene acetals or vinyl ethers. PSE-glucal remains a new and unexplored intermediate, which leads us to observe that the double bond between C-1 and C-2 could be more reactive in addition, glycosylation, and epoxidation reactions under acidic conditions than the classical Ferrier rearrangement. The core of this work is to further extend the reactivity of PSE-glucal toward the development of new *N,O*-glycosides [4,5], 2-deoxyglycosides [6], and 2-halo-mannopyranosides [7,8] (Figure 1).

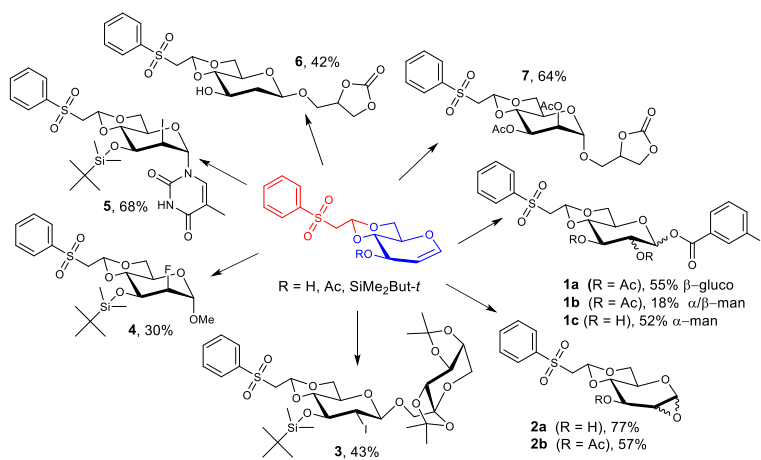


Figure 1. Synthetic strategy of this work.

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