

## Introducing $\alpha$ -Oxoester (COBz) as a Protecting Group for Carbohydrates

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**Abstract :** Oligosaccharides, which are essential to all cellular organisms, play vital roles in cell recognition, signaling, and are involved in a broad range of biological processes. The chemical synthesis of carbohydrates represents a powerful tool to provide homogeneous glycans. In carbohydrate synthesis, the major concern is the orthogonal protection of hydroxyl groups that can be unmasked independently. Classical protecting groups include benzyl ethers (Bn), which are normally cleaved through hydrogenolysis or by means of metal reduction, and acetate (Ac), benzoate (Bz) or pivaloate esters, which are removed using base promoted hydrolysis. In present work a series of  $\alpha$ -Oxoester (COBz) protected saccharides, with divergent base sensitivity profiles against benzoyl (Bz) and acetyl (Ac), were designed and  $\text{KHSO}_5/\text{CH}_3\text{COCl}$  in methanol was identified as an easy, mild, selective and efficient deprotecting reagent for their removal in the perspective of carbohydrate synthesis. Timely monitoring of later reagent was advantageous in establishing both sequential as well as simultaneous deprotecting of COBz, Bz, and Ac. The salient feature of our work is its ease to generate different acceptors using designed monosaccharides. In summary, we demonstrated  $\alpha$ -Oxoester (COBz) as a new protecting group for carbohydrates and the application of this group for the synthesis of Glycosylphosphatidylinositol (GPI) anchor are in progress.

**Keywords :**  $\alpha$ -Oxoester, oligosaccharides, new protecting group, acceptor synthesis, glycosylation

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