## **Phosphoric Acid Mediated Glycosylation and Alcohol-Chirality Recognition**

## Selected examples:

## HO. HO. Ph 85% yield (β, R) 87% yield (β, R) 67% yield (β, R) 0% yield (β, S) 0% yield ( $\beta$ , S) 13% yield (β, S) OTBDPS OMe $(\pm)$ (±) 84% yield (β, R) 75% yield (β, R) 77% yield (β, R) 17% yield (β, S) 0% yield (β, S) 8% yield (β, S)

## Reaction pathway:

Significance: Toshima and co-workers report a highly  $\beta$ -selective glycosylation of  $\alpha$ -trichloroacetimidates  $\mathbf{1}\alpha$  with various secondary alcohols. The diastereoselectivity is moderate to excellent, and the reaction is mediated by the phosphoric acid (S)-3. According to mechanistic studies, the exclusive  $\beta$ -selectivities are obtained through a (S)-3mediated  $S_N$ 2 reaction pathway. The methodology was also applied to the total synthesis of a natural flavan glycoside using a racemic aglycone.

**Comment:** Glycosylation is an important synthetic method to construct sugar moiety containing compounds. Here, the authors report a novel Brønsted acid mediated glycosylation, and a kinetic resolution of secondary alcohols occurs during the process at the same time. This methodology provides a straightforward way for the synthesis of sugar-derived products with high stereoselectivity.

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