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Organocatalysis for the Acid-Free O-Arylidenation of Carbohydrates

By: Geng, Y (Geng, Yiqun)[1]; Faidallah, HM (Faidallah, Hassan M.)[2]; Albar, HA (Albar, Hassan A.)[2]; Mhkalid, IA (Mhkalid, Ibrahim A.)[2]; Schmidt, RR (Schmidt, Richard R.)[1,2]

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Abstract

Methyl glycopyranosides of glucose, galactose, and mannose, their 2,3-di-O-benzyl-protected derivatives, as well as the unprotected sugars react with p-methoxybenzaldehyde dimethyl acetal (3) and with benzaldehyde dimethyl acetal (7) as reagents in the presence of thiourea 1 or squaramide 2 as the organocatalyst to afford regioselectively 4,6-O-arylidenated derivatives 5 and 8. With an excess amount of 3 or 7, diarylidenated derivatives are also obtained. In situ formation of acetals of type 3 and 7 from corresponding aldehydes 10 and 13 in the presence of an orthoester and organocatalyst 1 or 2 can be used to generate 5 and 8 directly from the aldehydes. Some substrates also lead to mixed orthoesters with this procedure. The reaction courses are discussed.

Keywords

Author Keywords: Acetals; Carbohydrates; Organocatalysis; Protecting groups; Synthetic methods
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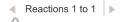## Journal Information

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◄ Compounds 1 to 8 ▶

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3. **Compound Details**   4. **Compound Details**

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