Gold(I)-Catalyzed Stereoselective Synthesis of Deoxyglycosides

Significance: Deoxyhexose structures can be found in a wide range of natural products. The authors have developed an α-stereoselective catalytic synthesis of deoxyglycosides from glycals by using Au(I)/AgOTf.

Comment: The reaction can be applied to a broad range of glycals and alcohols to give α-deoxyglycosides in high yields and with excellent selectivity. The utility of the reaction was demonstrated by the synthesis of oligosaccharides through the coupling reaction followed by deprotection.

Proposed mechanism:

Selected examples:

89% yield
76% yield
78% yield
79% yield
85% yield

Key words: gold catalysis, deoxyglycosides, glycals, alkoxylation

Category: Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions