Mukaiyama Aldol Reaction Catalyzed by Gallium(III) Triflate

Significance: The authors report a mild method for the diastereoselective Mukaiyama aldol reaction. The process is catalyzed by gallium(III) triflate yielding to the corresponding β-hydroxy ketones in up to 92% yield.

Comment: The developed method is an efficient aldol reaction under mild conditions with a very low catalyst loading of gallium(III) triflate (0.01–1.0 mol%). This is the first example of a metal triflate acting as a safe and stable slow-releasing source of triflic acid in the Mukaiyama aldol reaction. Gallium(III) triflate is a stable, easy-to-handle white solid.

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