

Hydrogen-Bond Catalyst Grants Access to Diverse Scope of Enantioenriched Stereogenic-at-P(V) Building Blocks

Category

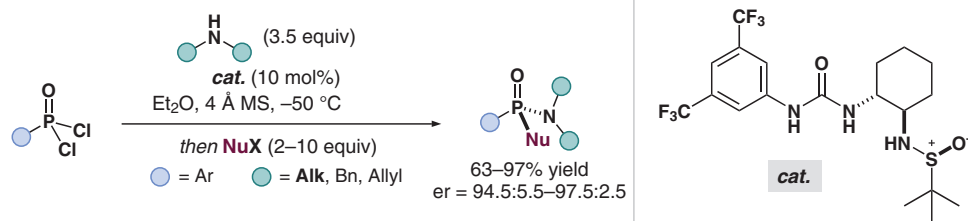
Organo- and Biocatalysis

Key words

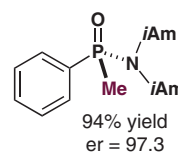
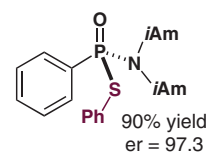
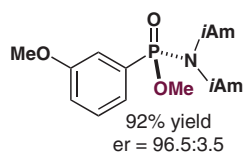
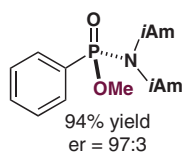
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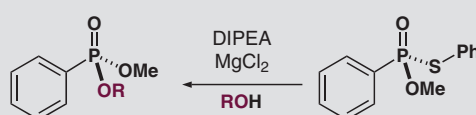
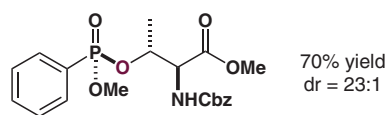
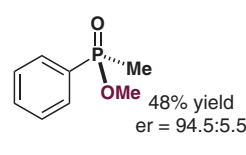
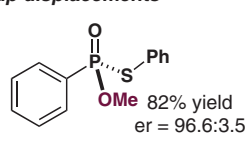
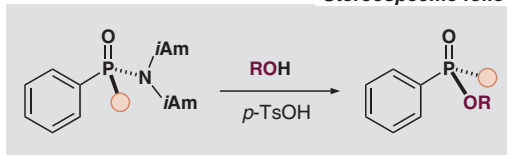
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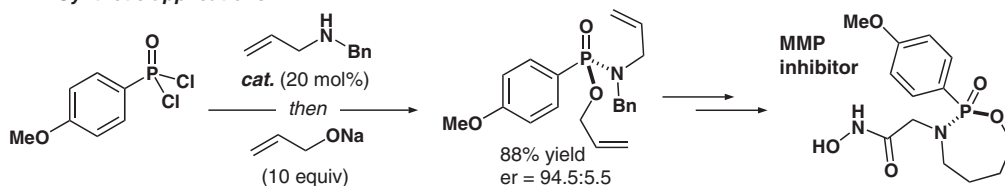
Selected examples



Stereospecific follow-up displacements



Synthetic applications



Significance: Forbes and Jacobsen report a hydrogen-bond-donor-catalyzed desymmetrization of arylphosphonic dichlorides to give enantioenriched chlorophosphoramidate intermediates, and their stereospecific transformations to furnish a variety of building blocks that are stereogenic at a P(V) atom. Use of a commercially available urea-based organocatalyst gave the corresponding products in generally good yields and with excellent enantiomeric ratios.

Comment: Whereas enantioenriched stereogenic-at-P(V) compounds have emerged as crucial building blocks in medicinal chemistry, their enantioselective synthesis has typically relied on the use of chiral auxiliaries. The authors contribute a broadly applicable method and prove its synthetic potential with the synthesis of known biologically active compounds.