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Confinement-Controlled, either *syn*- or *anti*-Selective Catalytic Asymmetric Mukaiyama Aldolizations of Propionaldehyde Enolsilanes

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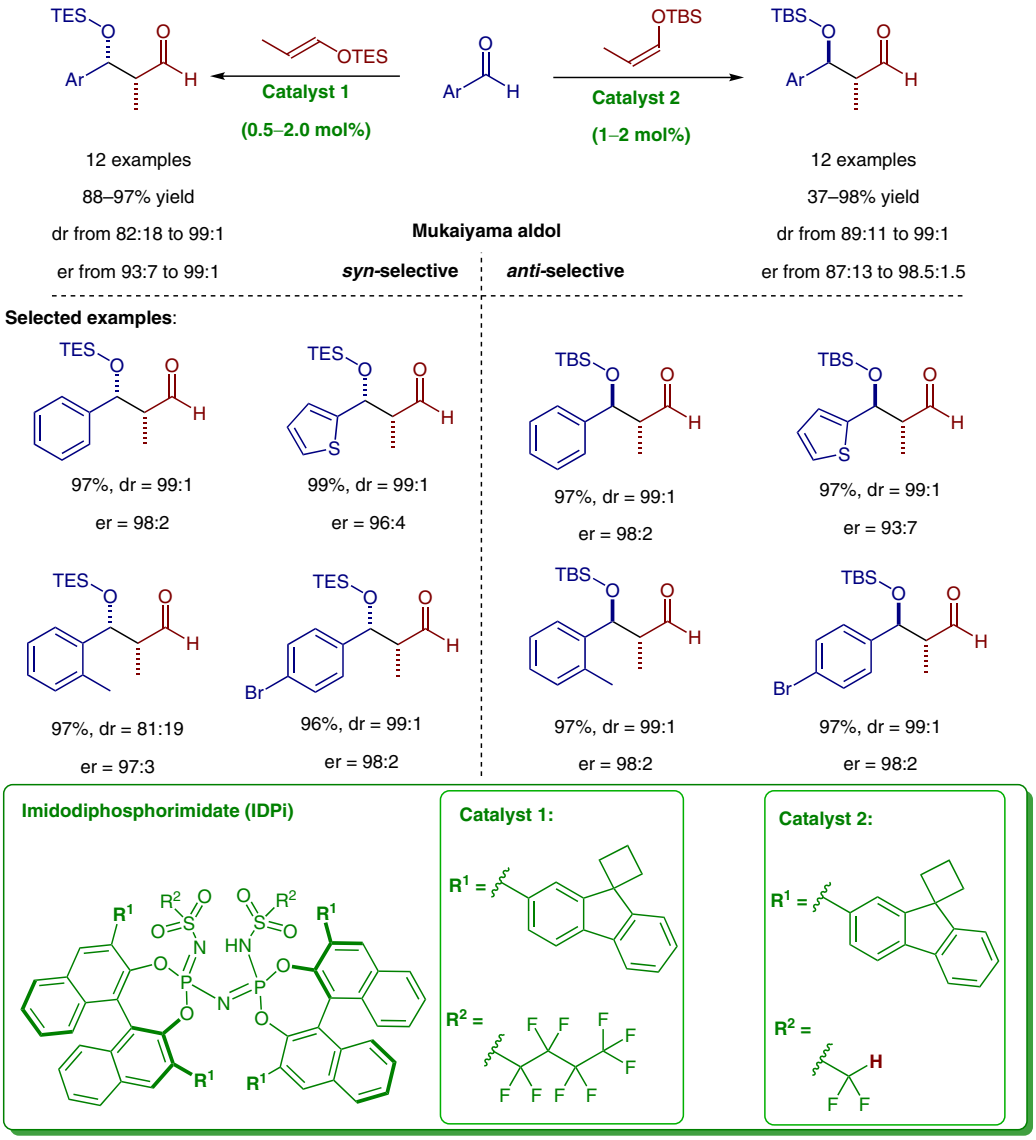
Catalytic Asymmetric Aldolization of Propanal Enol Silanes



Significance: List and co-workers report an asymmetric Mukaiyama aldolization controlled by a confined chiral imidodiphosphorimidate catalyst. By using catalysts **1** and **2**, *syn*- or *anti*-aldol products can be obtained from (*E*)- or (*Z*)-enolsilanes, respectively, in high yields and with high diastereo- and enantioselectivities.

Comment: Compared with the reported pioneering work (S. E. Denmark, S. K. Ghosh *Angew. Chem. Int. Ed.* **2001**, *40*, 4759), this method presents an improved, fully atom- and step-economic strategy. Ultimately, it could streamline the syntheses of complex oligopropionates.

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Category

Organo- and Biocatalysis

Key words

confinement
asymmetric catalysis
stereoselectivity
Mukaiyama reaction

Synfact of the Month