M. HATANO, T. MAKI, K. MORIYAMA, M. ARINOBE, K. ISHIHARA* (NAGOYA UNIVERSITY, JAPAN) Pyridinium 1,1'-Binaphthyl-2,2'-disulfonates as Highly Effective Chiral Brønsted Acid-Base Combined Salt Catalysts for Enantioselective Mannich-Type Reaction *J. Am. Chem. Soc.* **2008**, *130*, 16858-16860.

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Chiral Brønsted Acid–Base Pyridinium Disulfonate Catalysts



Significance: By combining chiral disulfonic acid **1** and achiral 2,6-diphenylpyridine the authors obtain tailor-made Brønsted acid–base organocatalysts for a direct Mannich-type reaction. Excellent yields and enantioselectivities were achieved with this concept. **Comment:** The authors use an original and elegant strategy for high enantioinduction in comparison to the generally applied strategy of substitution at the 3,3'-positions with bulky substituents in analogous binaphthyl phosphoric acid catalysts (e.g., see: Akiyama et al. *Angew. Chem. Int. Ed.* **2004**, *43*, 1566). By forming a salt of chiral disulfonic acid **1**, which has been tested earlier as organocatalyst by List and co-workers (*Chem. Asian J.* **2008**, *3*, 430; *Adv. Synth. Catal.* **2008**, *350*, 962), and bulky pyridines, the authors circumvent the often tedious synthesis of the 3,3'-substituted derivatives. On the other hand, the acidity is reduced this way and therefore the substrate scope might be limited to easily activated compounds.

 SYNFACTS Contributors: Benjamin List, Frank Lay

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