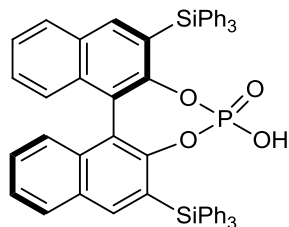
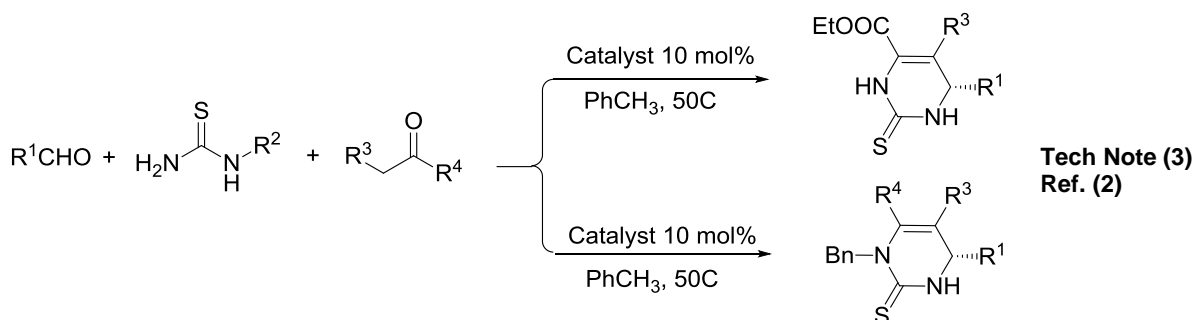
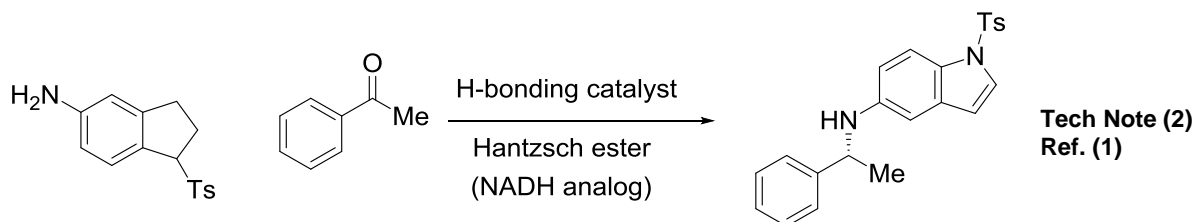


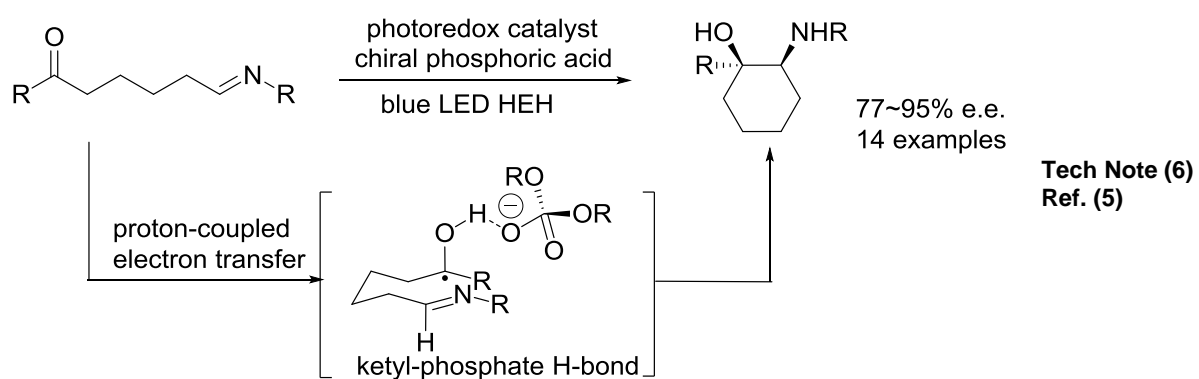
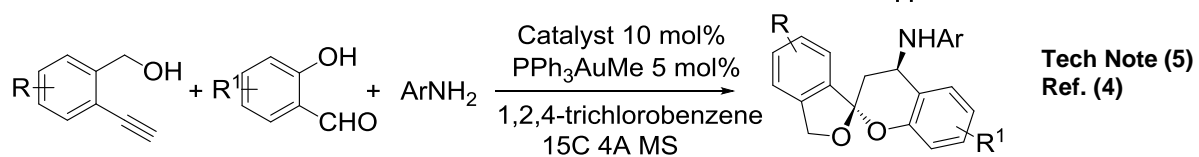
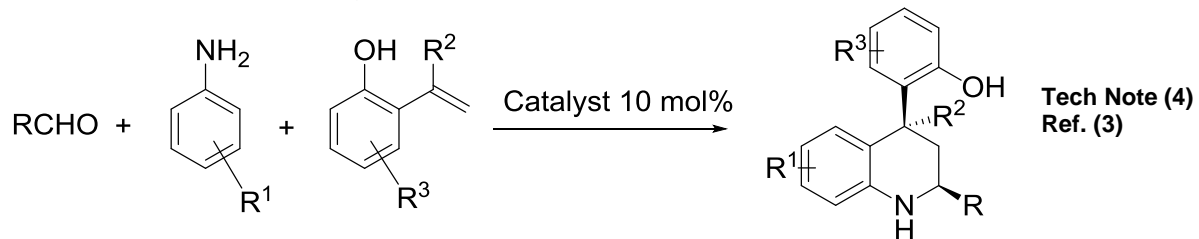
Catalog # 15-0340 (R)-(-)-3,3'-Bis(triphenylsilyl)-1,1'-binaphthyl-2,2'-diyl hydrogen phosphate, min. 98% [(R)-TiPSY]



Technical Notes:

1. See 15-1366. Catalyst used in;
2. **Reductive Amination:** The development of a new chiral phosphoric acid catalyst has provided a convenient strategy for the enantioselective construction of protected primary amines and provided a highly stereoselective method for the reductive amination of heterocyclic amines.
3. **Biginelli and Biginelli-like Reaction:** Organocatalytic enantioselective Biginelli and Biginelli-like reactions by chiral phosphoric acids derived from 3,3'-disubstituted binaphthols.
4. **Povarov Reaction:** An organocatalytic asymmetric three-component Povarov reaction involving 2-hydroxystyrenes to give cis-disubstituted tetrahydroquinolines in high stereoselectivities of up to >99:1 dr and 97% ee.
5. **Cascade Spirocyclization:** The gold/chiral Brønsted acid relay catalysis enabled a highly stereoselective three-component reaction of salicylaldehydes, anilines, and alkynols to give aromatic spiroacetals in high yields and stereoselectivities.
6. **aza-Pinacol Cyclization:** The first highly enantioselective catalytic protocol for the reductive coupling of ketones and hydrazones is reported.





**References:**

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2. *J. Am. Chem. Soc.*, **2009**, *131*, 15301-15310.
3. *J. Am. Chem. Soc.*, **2012**, *77*, 6970-6979.
4. *Org. Lett.*, **2013**, *15*, 460-463.
5. *J. Am. Chem. Soc.*, **2013**, *135*, 17735-17738.