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# Propargylic-Amines and Alcohols Through *anti*-Selective Mannich and Aldol Reactions.

E. Gómez-Bengoa, J. M. Garcia,J. Jiménez, I. Lapuerta, M. Maestro, A. Mielgo, J. M. Odriozola, M. Oiarbide, I. Otazo, J. Razkin, I. Urruzuno, S.Vera and C. Palomo

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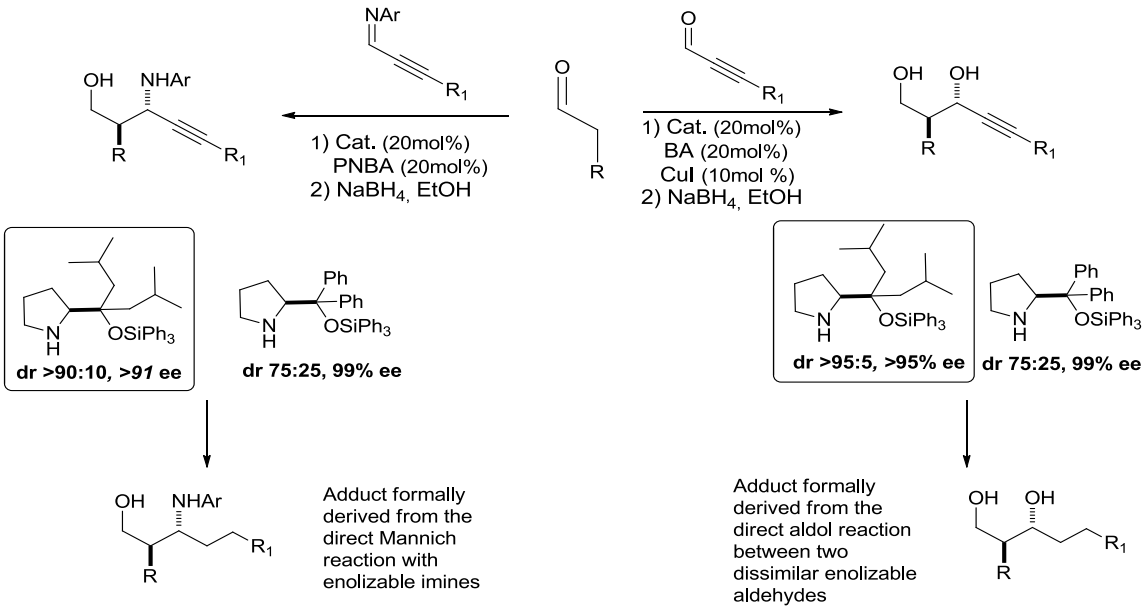
Herein we present a practical and selective route to synthetically usefull propargylic amines and alcohols.[1] The key of both approaches is the combined use of an α,α-dialkylprolinol ether catalyst and a Brønsted acid that leads to adducts with high levels of diastereo- and enantiocontrol (*anti*/*syn* up to 90:10, *ee* up to 95%). In the aldol addition it was also observed that the presence of CuI as a third catalyst component, generally provided an increase in reaction diastereoselectivity (*anti*/*syn* up to 95:5).




This study uncovers a new case of chiral enamine catalysis in which α,α-dialkylprolinol silyl ethers perform better than their parent α,α-diaryl analogs. The resulting densely funcionalyzed adducts may be transformed into more complex systems taking advantage of the chemistry of the triple bond.

[1] E. Gomez-Bengoa, J. Jimenez, I. Lapuerta, A. Mielgo, M. Oiarbide, I. Otazo, I. Velilla, S. Vera, C. Palomo. Chem. Sci. 2012, 3, 2949-2957
E. Gomez-Bengoa, J. M. Garcia, S. Jimenez, I. Lapuerta, A. Mielgo, J. M. Odriozola,M. Oiarbide, I. Otazo, I. Urruzuno, S. Vera, C. Palomo. Chem. Sci. 2013, 4, 3198-3204