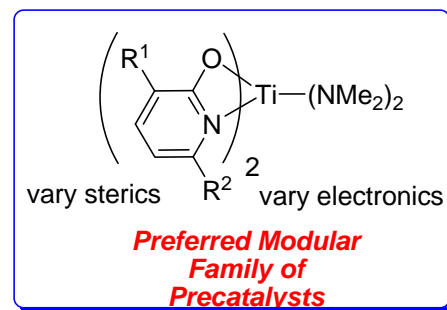
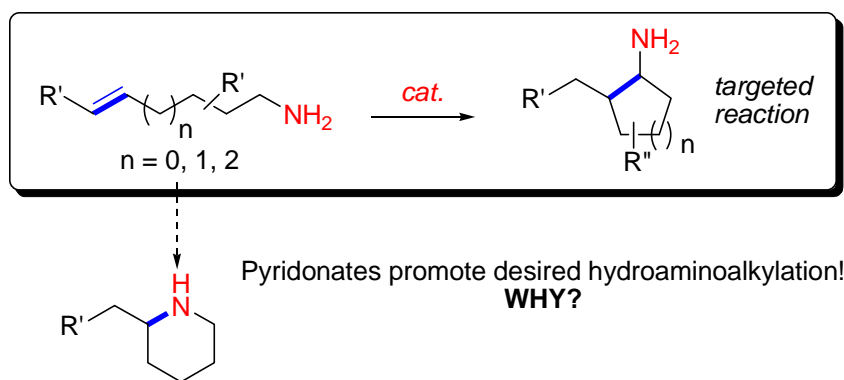


Catalytic C-H Functionalization of sp^3 Hybridized Bonds Adjacent to Nitrogen. New Metal Complexes for the Atom Economic Synthesis of α -Chiral Primary Amines

Eugene Chong, Philippa R. Payne, Laurel L. Schafer

*Department of Chemistry, The University of British Columbia,
Vancouver, BC, Canada*

Hydroaminoalkylation, or the direct α -alkylation of amines, is an attractive synthetic approach for preparing substituted amines. Often, desired hydroaminoalkylation products are accompanied by hydroamination by-products. A detailed understanding of the catalytic mechanism provides insight for catalyst design to access one reaction manifold over another. Pyridonates show the best reactivity thus far.



Reaction Kinetics (by NMR spectroscopy) Show :

- First order in substrate
- KIE indicates turnover limiting C-H activation
- Eyring analysis consistent with highly order transition state

Remaining Goals :

- Isolate organometallic reactive intermediates for mechanistic investigations
- Extend reactivity to intermolecular version
- Prepare new catalysts for diastereoselective and enantioselective variants