Zinc(II)-Amine Catalyzed Enantioselective Hydrosilylation

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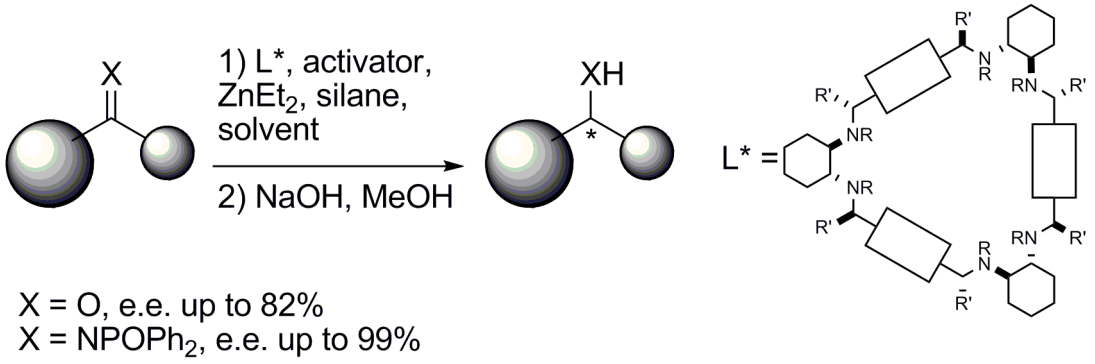
Enantioselective addition of silylated nucleophiles to polar C=X bonds, such as prochiral ketones and imines, is a subject of current intensive research.[1]

Asymmetric hydrosilylation[2] is an alternative method to asymmetric reduction of ketones and imines, providing access to enantiomerically enriched secondary alcohols or primary amines. In the highly developed and competitive world of asymmetric synthesis various approaches ofer different advantages in getting the same type of non-racemic product. The differences in the approaches are usually centered around the catalytic system used and the substrate/reagent combination.

Our approach to asymmetric hydrosilylation is based on the readily accessible catalytic systems consisting of zinc(II) and chiral macrocyclic ligands, trianglamines, readily accessible from *trans*-1,2-cyclohexanediamine.[3] This system is not only effective, but also environmentally non-invasive.[4]



The synthetic scope of developed catalytic methods and mechanistic studies will be presented and discussed.

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