World Academy of Science, Engineering and Technology
International Journal of Chemical and Molecular Engineering
Vol:14, No:07, 2020

Asymmetric Synthesis of β- and γ-Borylated Amines via Rh-Catalyzed Hydroboration of Allylamine Derivatives

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Abstract : Amines bearing γ-stereocenters are important structural motifs found in many biologically active compounds. Regioselective Rh-catalyzed asymmetric hydroboration of acyclic allylamines is used to synthesize amines bearing chiral β- and γ-boronic esters yields up to 70% with 98:2 enantioselectivity. The major enantiomeric outcome can be independent of starting alkene geometry, revealing that cis/trans-isomerization of alkene can occur before hydroboration. Stereospecific transformations of the newly generated C-B bond illustrates the utility of these chiral synthons.

Keywords : allylamines, borylated amines, chiral amines, hydroboration, rhodium-catalysis
Conference Title : ICCS 2020 : International Conference on Chirality and Stereochemistry
Conference Location : Rome, Italy
Conference Dates : July 23-24, 2020