Asymmetric Pd-Catalyzed Alkene Carboamination Reactions for the Synthesis of 2-Aminoindane Derivatives


Palladium-Catalyzed Asymmetric Carboamination of Alkenes

Significance: The authors presented an asymmetric alkene carboamination reaction that uses an external amine nucleophile. A combination of a palladium(II) salt and the (S)-t-BuPHOX ligand worked efficiently to deliver 2-aminoindane derivatives in high yields and excellent enantioselectivities (>98% ee).

Comment: The intermolecular anti-aminopalladation with an external amine nucleophile is the major highlight of this work. This group previously reported an intramolecular anti-aminopalladation for the synthesis of cyclic sulfonamides (Chem. Eur. J. 2014, 20, 8782). A deuterium-labelling study supported the anti-aminopalladation pathway. The choice of the chiral ligand and nucleophile are crucial for high yields and selectivities.