

Ammonia Substitutes and Diallylation for Enantioselective Iridium-Catalyzed Allylic Amination

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The reactions of potassium (2,2,2-trifluoroacetyl) amide and bis(*tert*-butoxycarbonyl)amide with achiral (*E*)-cinnamyl and terminal aliphatic allylic carbonates in the presence of 2-4 mol % of an iridium-phosphoramidite complex provide protected chiral allylic amines in good yields and excellent levels of enantioselectivity. These amines are easily deprotected with base or acid respectively to provide chiral allylic primary amines. *tert*-Butyl carbamate also provides protected chiral allylic amines when reacted in the presence of cesium carbonate or potassium phosphate. Use of ammonia as a nucleophile in this reaction provides diallylated products, which can be further transformed into C₂-symmetric 2,5-disubstituted pyrrolidines.

