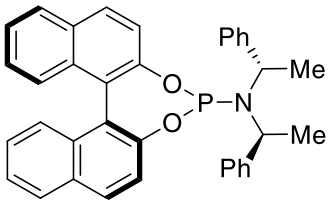
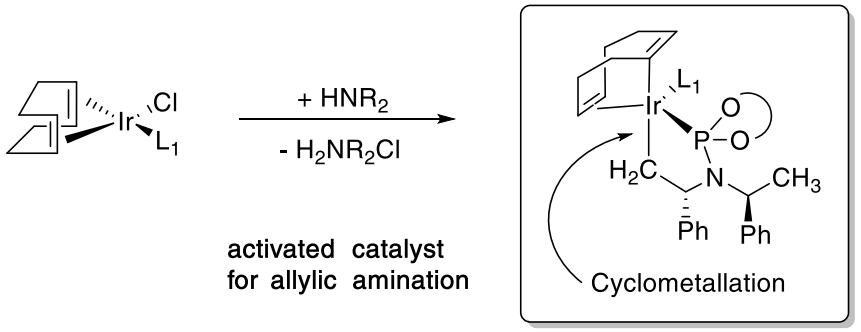
Catalog # 15-5614 (11bS)-N,N-Bis[(S)-1-phenylethyl]-dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-amine

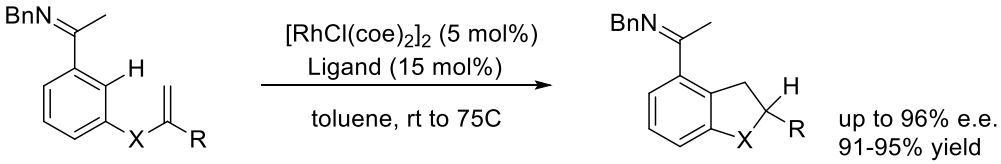



Technical Notes:

1. Amination - Studies were conducted to determine possible intermediates in the highly enantioselective, iridium-catalyzed amination and etherification of allylic carbonates, and these studies revealed that cyclometalation of this phosphoramidite ligand is likely to generate the active catalyst.
2. Cyclization - Enantioselective cyclization of aromatic ketimines containing alkenyl groups tethered at the meta position of an imine directing group has been achieved using 5 mol% [RhCl(coe)2]2 and 15 mol% of this (S)-BINOL-derived phosphoramidite ligand.
3. Kinetic Resolution - A variety of substituted 2-cyclohexenones, such as (R)-1, is obtained enantiomerically pure by employing the chiral copper-phosphoramidite complex [Cu(OTf)2L*] as a highly efficient catalyst for their kinetic resolution.
4. Decarboxylative Alkylation - [Ir(COD)Cl]2/phosphoramidite ligand was found to be an efficient catalytic system for the highly regio- and enantioselective decarboxylative alkylation of γ-substituted allyl β-ketocarboxylates.
5. Friedel-Crafts Alkylation - Highly regio- and enantioselective Ir-catalyzed Friedel-Crafts type allylic alkylation of indoles have been realized using [Ir(COD)Cl]2/phosphoramidite ligand.
6. Allylic Alkylation - Ir-catalyzed allylic aminations of (E)-4-benzyloxy-2-butenyl methyl carbonate with benzylamine using Feringa's (Sa,Sc,Sc)-phosphoramidite as a chiral ligand afforded linear-aminated achiral product N,O-dibenzyl-4-amino-2-buten-1-ol regioselectively
7. The first dynamic kinetic asymmetric transformation in copper catalyzed allylic alkylation is reported, with enantioselectivities up to 92%.




**Tech Note (1)**
**Ref. (1)**

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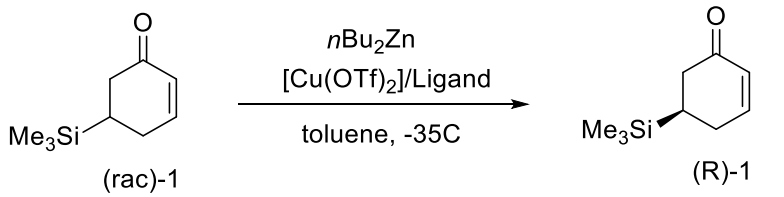


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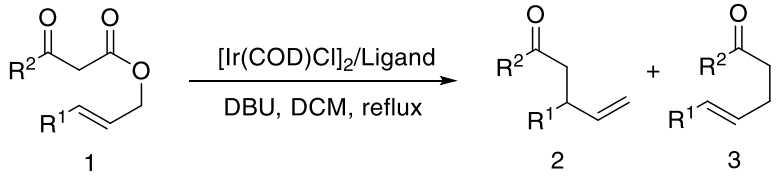
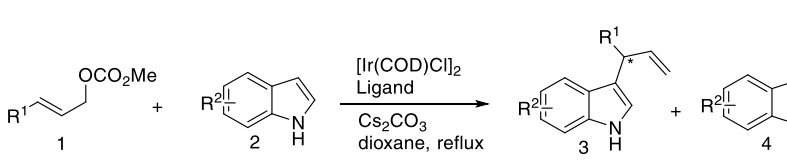


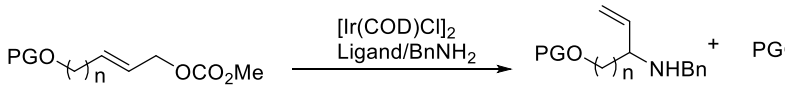

2/3: up to >99/1
ee of 2: up to 96%

**Tech Note (4)**
**Ref. (4)**



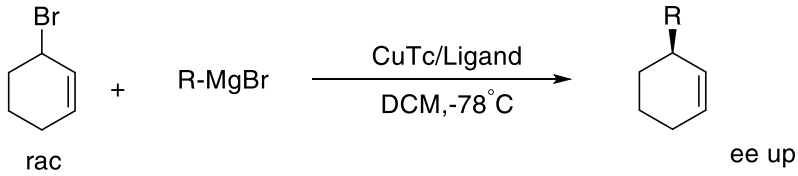

3/4: up >97/3
ee of 3: up to 92%

**Tech Note (5)**
**Ref. (5)**




n=1: b/l=>1/99
n=2: b/l=99/1(96%ee)

**Tech Note (6)**
**Ref. (6)**




ee up to 92%

**Tech Note (7)**
**Ref. (7)**

References: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2. *J. Am. Chem. Soc*., **2004**, *126*, 7192-7193.
3. *Angew. Chem. Int. Ed*., **2001**, *40*, 927-930.
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