

Y. KUNINOBU,* H. IDA, M. NISHI, M. KANAI* (THE UNIVERSITY OF TOKYO AND ERATO, TOKYO, JAPAN)

A *meta*-Selective C–H Borylation Directed by a Secondary Interaction between Ligand and Substrate

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Regioselective Aromatic C–H Borylation

Category

Metal-Mediated
Synthesis

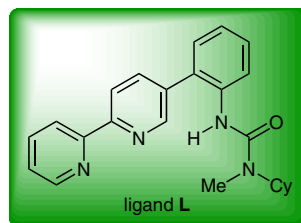
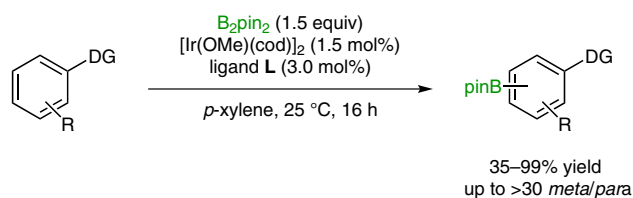
Key words

borylation

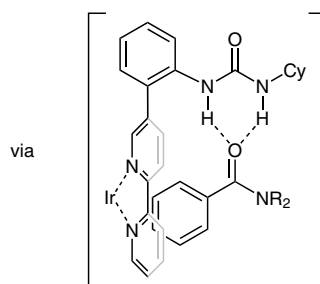
regioselectivity

iridium

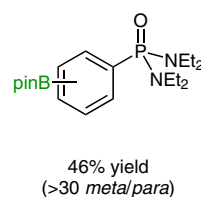
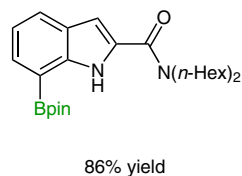
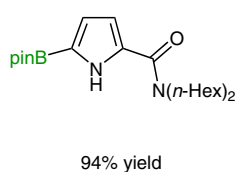
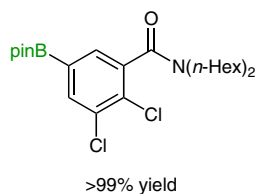
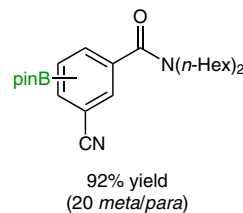
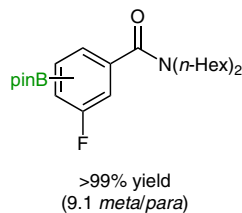
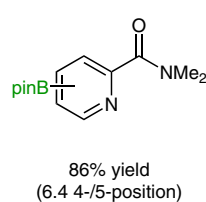
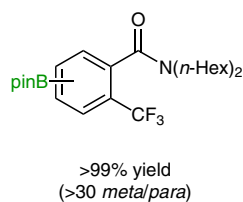
Synfact
of the month



DG = C(O)N(*n*-Hex)₂, C(O)NMe₂, CO₂Et,
P(O)(OEt)₂, P(O)(NEt₂)₂, P(O)Cy₂
R = H, Me, OMe, F, Cl, Br, CF₃, OCF₃, CO₂Me, CN, Ph



Selected examples:



Significance: Kanai, Kuninobu, and co-workers report a *meta*-selective C(sp²)–H borylation directed by a hydrogen-bonding secondary interaction between the substrate and the ligand. The reaction shows wide substrate scope and high functional group tolerance. Moreover, the employed ligand **L** is easily accessible.

Comment: The secondary interaction between the urea-derived ligand **L** and a hydrogen-bond acceptor in the substrate places the iridium catalyst in close proximity to the *meta*-C–H bond and thus controls the regioselectivity in this protocol.

SYNFACTS Contributors: Paul Knochel, Diana Haas
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