Regioselective Aromatic C–H Borylation

Significance: Kanai, Kuninobu, and co-workers report a meta-selective C(sp³)-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.

DG = C(O)(n-Hex)₂, C(O)NMeth, CO₂Et, P(O)(OEt)₂, P(O)(NEt)₂, P(O)(Cy)₂
R = H, Me, OMe, F, Cl, Br, CF₃, OCF₃, CO₂Me, CN, Ph