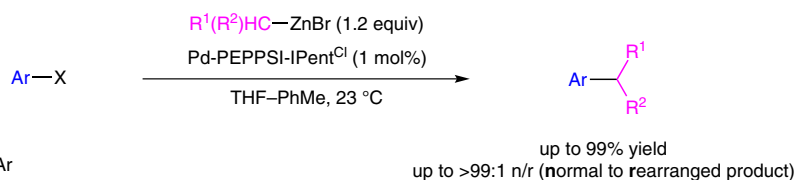


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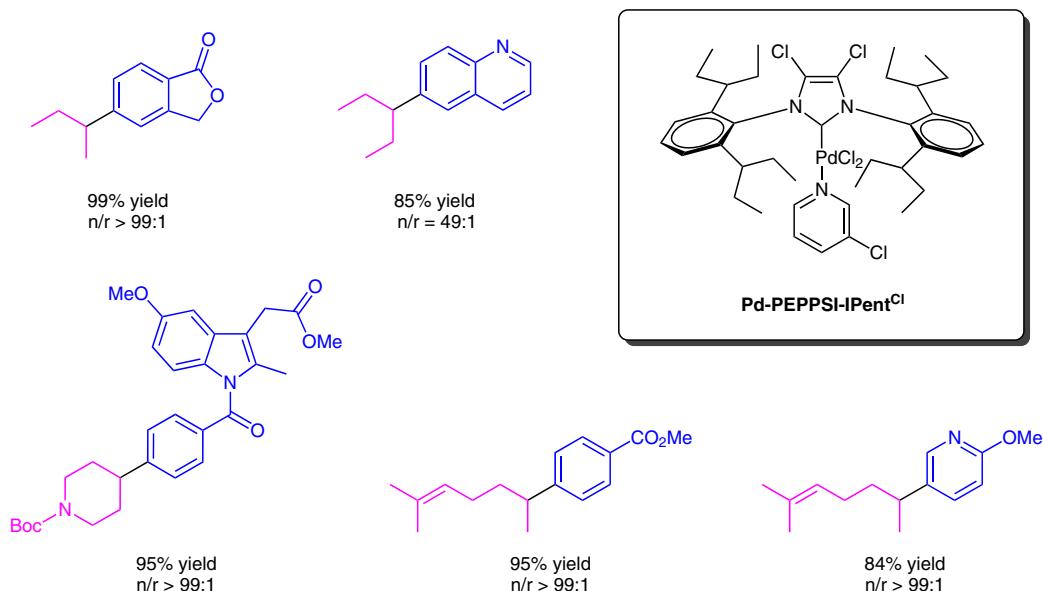
Pd-PEPPSI-IPent^{Cl}: A Highly Effective Catalyst for the Selective Cross-Coupling of Secondary Organozinc Reagents
Angew. Chem. Int. Ed. **2012**, *51*, 11354–11357.

Pd-PEPPSI-IPent^{Cl} – Selective Coupling of Secondary Organozinc Nucleophiles



Ar = Ar, O- and N-HetAr
 R¹ = Me, Et
 R² = Et, alkenyl, *n*-Pr
 R¹ + R² = Boc-protected piperidine
 X = Br, Cl, OTf

Selected examples:



Significance: The authors report the new catalyst Pd-PEPPSI-IPent^{Cl}, which highly efficiently couples secondary alkylzinc reagents to (hetero)aryl bromides, chlorides and triflates. The corresponding alkylated aromatics are obtained in excellent yield and with high regioselectivity.

Comment: β -Hydride elimination (BHE) constitutes one of the main drawbacks for the cross-coupling of secondary alkyl reagents, especially if they react with electron-rich coupling partners. These problems are overcome by the new palladium-catalyst, which bears bulkier substituents and additionally, is characterized by a decreased electron density, thus favoring reductive elimination instead of BHE. Density functional theory (DFT) calculations support the theoretical selectivities.

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