Ni-Catalyzed Enantioselective Reductive Diarylation of Activated Alkenes by Domino Cyclization/Cross-Coupling

**Significance:** The authors report a reductive diarylation of alkenes by using a nickel-catalyzed domino process employing two aryl electrophiles. This represents the first report of metal-catalyzed reductive coupling for the synthesis of oxindole scaffolds.

**Comment:** Following optimization of the reaction conditions, a broad substrate scope that included aryl bromides and alkenes was observed. An example of an azaoxindole was also demonstrated. The authors consider two possible pathways: One features two oxidative addition steps. The key step of the second pathway is a transmetalation between two nickel(II) species.

**Proposed mechanisms (key intermediates):**

**Selected examples:**

- 81% yield, 96% ee
- 51% yield, 96% ee
- 62% yield, 98% ee
- 40% yield, 95% ee
- 45% yield, 94% ee
- 51% yield, 94% ee
- 62% yield, 97% ee
- 53% yield, 98% ee

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