**Co/Ti Cooperative C(sp²)–C(sp²) Cross-Coupling Reactions**

![Chemical structures and yields](image)

**Significance:** A novel method for cobalt-catalyzed cross-coupling reactions between aryl chlorides or bromides and aromatic magnesium or lithium reagents is reported by Duan and co-workers. The presence of 40 mol% of Ti(OEt)₄ suppresses undesired homocoupling side-products resulting from the organometallic reagent.

**Comment:** Interestingly, the reaction can also take place in the presence of a free carboxylic acid, a hydroxyl, or an amide residue. Therefore, this protocol allows an efficient arylation of highly functionalized aryl halides without protection–deprotection sequences.

**Selected examples:**

- PhO\[CF₃\] (82% yield)
- PhO\[CN\] (72% yield)
- PhO\[CO₂H\] (81% yield)
- PhO\[O₂C\] (80% yield)
- PhO\[O₂C\] (87% yield)
- PhO\[O₂C\] (73% yield)

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**Category:** Metal-Mediated Synthesis

**Key words:** cobalt, titanium, cooperative catalysis

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