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Synthesis of Planar Chiral Ferrocenes via Enantioselective Remote C–H Activation  
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## The Catellani Reaction meets C–H Activation: Synthesis of 1,3-Disubstituted Planar Chiral Metallocenes

Category

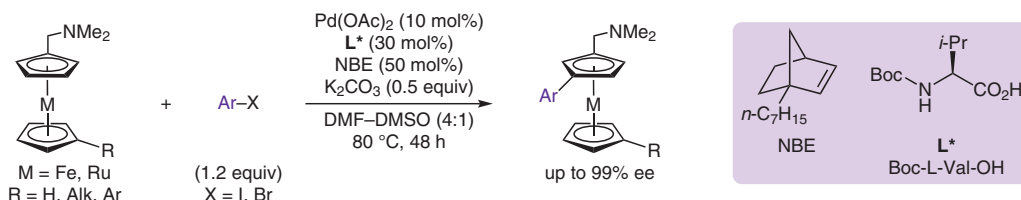
Metals in Synthesis

Key words

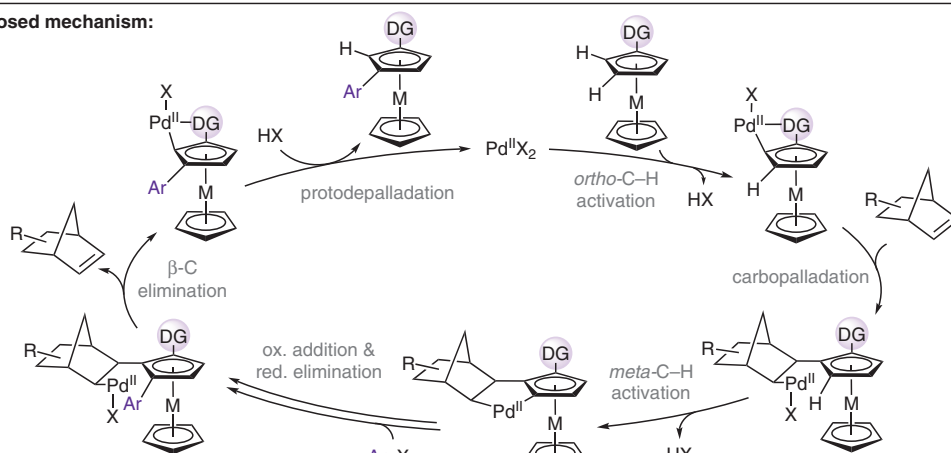
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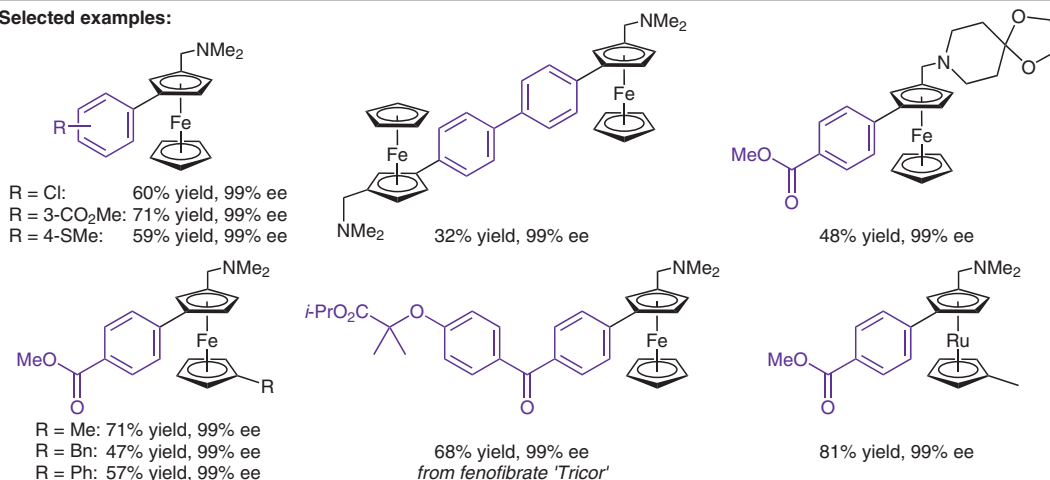
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Proposed mechanism:



Selected examples:



**Significance:** The synthesis of planar 1,3-disubstituted chiral metallocenes via palladium-catalyzed remote C–H activation is reported. The reaction features high enantioselectivities and good functional group tolerance. Aryl iodides as well as bromides serve as compatible coupling partners.

**Comment:** An initial directed enantiodetermining C–H activation at the *ortho*-position, enabled by a chiral mono-N-protected natural amino acid ligand, is followed by a C–H activation of the remote *meta*-position using a bridgehead-substituted norbornene mediator, akin to the Catellani reaction.

**SYNFACTS Contributors:** Martin Oestreich, Hendrik F. T. Klare, Aliyaah J. M. Rahman  
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