

Substituted Indenyl and Cyclopentadienyl Complexes of Group 9 Metals for C-H Functionalization

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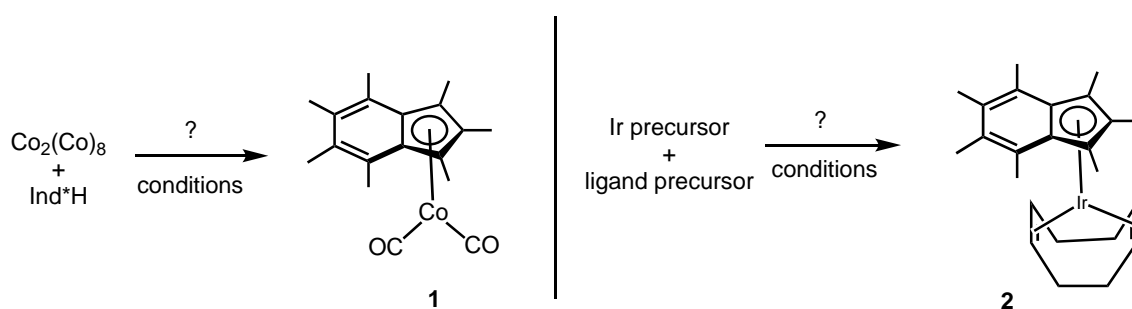
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Pentamethylcyclopentadienyl (Cp*) is a very popular ligand for a variety of different transition metal complexes, due to its beneficial steric and electronic properties. A large number of functionalized derivatives have been synthesized [1] and applied as ligands in homogeneous catalysis. Substituted indenyl ligands can be seen as enhanced members of this compound class, as substrate coordination is facilitated by the indenyl effect, providing a key to faster reaction rates and new types of transformations.

While the heptamethylindenyl (Ind*)Rh-complexes (prominently system like the [Ind*RhCl₂]₂ dimer) can be easily obtained by a variety of procedures [2], the corresponding Ir- and Co-complexes have not been reported before.

The aim of our work was the development of a convenient synthetic route towards compounds of this type (such as complexes **1** and **2**) and the acquisition of information on their catalytic performance in C-H activation and functionalization reactions, especially Ir-catalyzed borylations.



[1] A. Frei, *Chem. Eur. J.* **2019**, *25*, 1-18

[2] R. S. Paton, T. Rovis, *J. Am. Chem. Soc.* **2017**, *139*, 1296-1310