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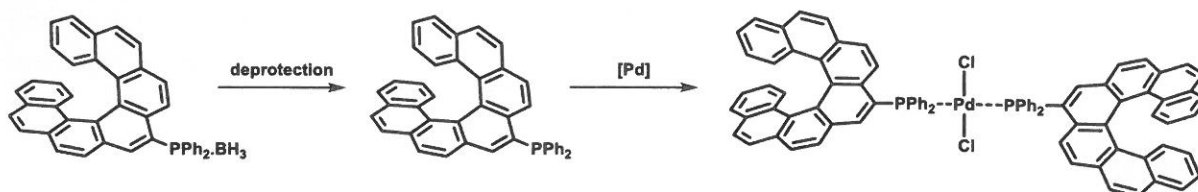
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Helical phosphines and their transition-metal complexes

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Helicenes, non-planar, screw-shaped hydrocarbons, represent molecules with unique optical and electronic properties. Due to them they can be applied in many fields of research¹. Surprisingly, coordination chemistry of helicenes and their use as chirality inductors is still strongly under-developed. Among privileged ligands exhibiting central, axial or planar chirality, use of helically chiral ligands in transition metal catalysis is still very rare. Herein we are focusing on helical phosphines potentially usable in homogeneous asymmetric catalysis. Based on previous results², methodology for preparation of transition metal complexes bearing helical phosphine ligands in their racemic form was developed (Scheme 1).



Scheme 1

Prepared palladium complex was successfully used in a model Suzuki-type reaction. Synthesis of other helical phosphines in their non-racemic form is in progress in our lab.

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¹ Gingras, M. *Chem. Soc. Rev.* **2013**, 42, 1051.

² Žádný, J.; Velíšek, P.; Jakubec, M.; Sýkora, J.; Církva, V.; Storch, J. *Tetrahedron* **2013**, 69, 6213.