Chiral Cp^{X}Ir(III) Catalyzed C-H Amidation Leading to P-Chiral Arylphosphine Oxides

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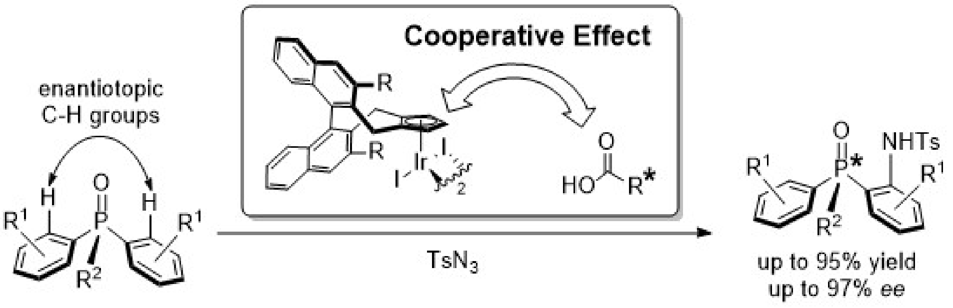
Organophosphorus compounds with *P*-stereogenic centers are valuable motifs in pharmaceuticals, agrochemicals, organocatalysts and ligands.[1] Only a limited number of catalytic enantioselective approaches have been developed to access molecules with a *P*-stereogenic center.[2]

Chang *et al.* reported an Ir(III) catalyzed amidation of arylphosphine oxides that proceeds in modest enantioselectivities.[3] We report that our recently developed chiral Cp^{X}Ir(III) complex,[4] in combination with a chiral carboxylic acid, provides a highly selective C-H amidation process. A very strong cooperative effect between the chiral Cp^{X}Ir(III) complex and the carboxylic acid was discovered. This proved to be pivotal for high enantioselectivities and yields.



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