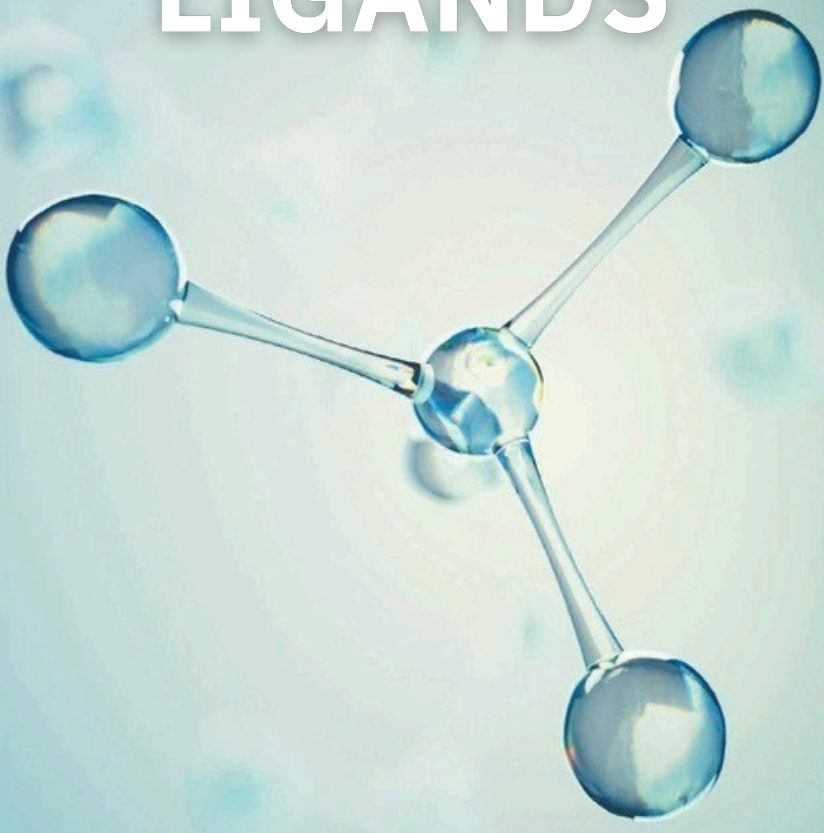
BUCHWALD PHOSPHINE LIGANDS



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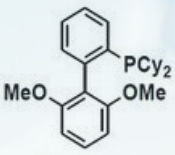
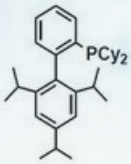
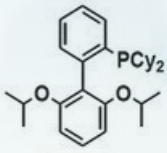
Buchwald Phosphine Ligands



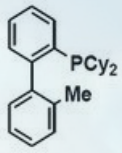
SPhos



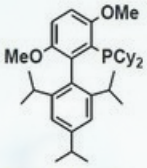
XPhos



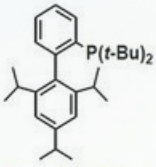
RuPhos



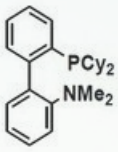
MePhos



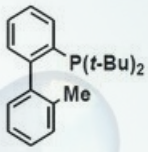
BrettPhos



t-Bu-XPhos

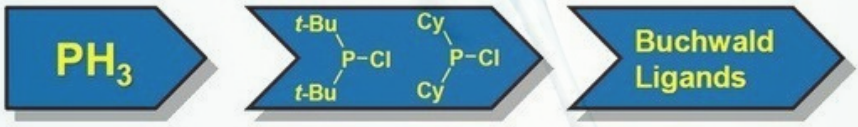


DavePhos



t-Bu-MePhos

Licensed by MIT



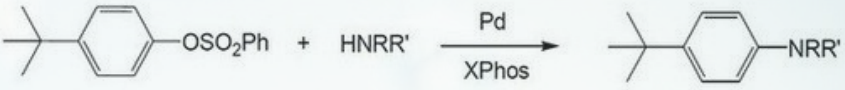
100 kg Production has been industrialized

NCI's advantages

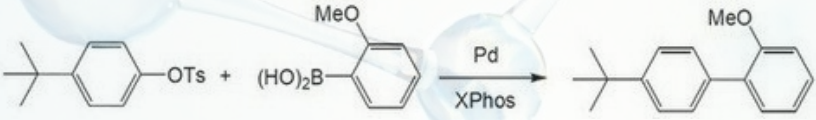
- Cost Effective: Integrated Production from PH_3
- High Purity: More than 98.0%
- Industrial Scale Supply: Flexible and Capable
- Contract Manufacturing Service: Ask us to find your solution

Application examples

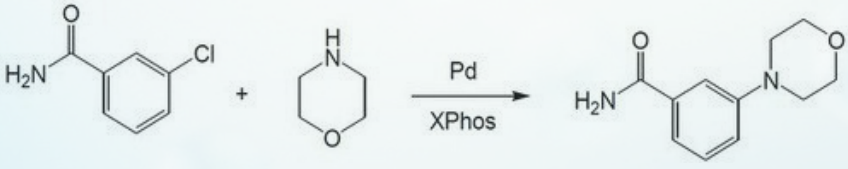
Amination and amidation of arylsulfonates



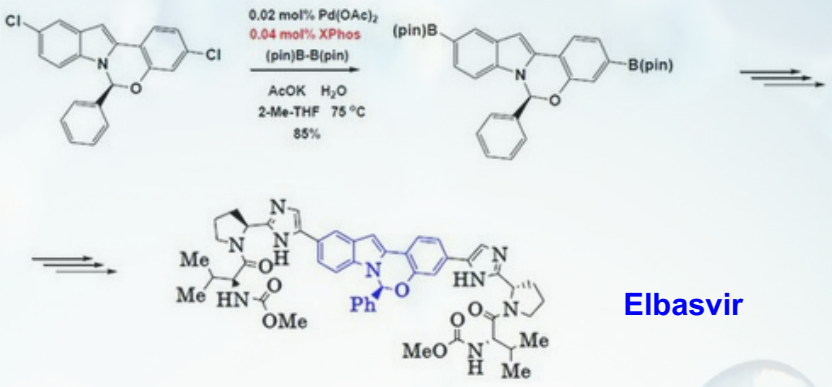
Pd catalyzed Suzuki-Miyaura coupling reaction



Chemoselective amination of aryl-chlorides

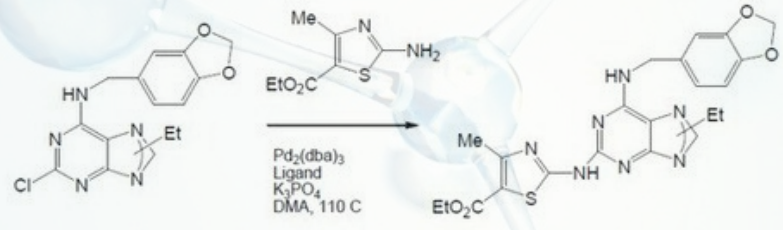


Applications in Pharmaceutical Synthesis

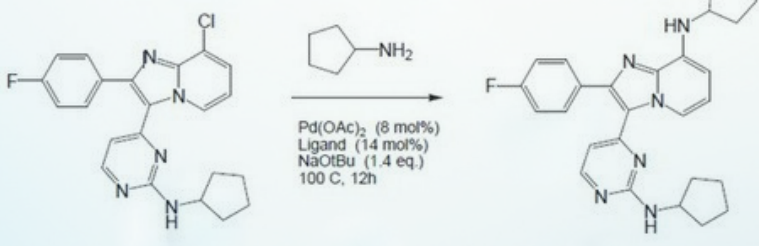


Elbasvir

J. Am. Chem. Soc., 2015, ***137***, 13728.

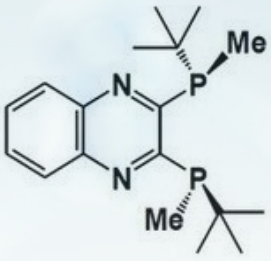


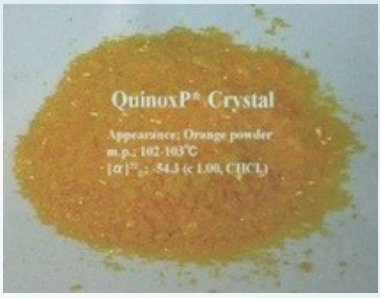
Bioorg. Med. Chem. Lett. 2004, ***14***, 2955.



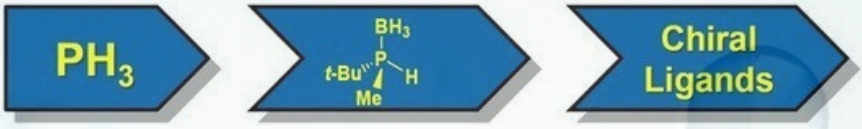
Org. Lett. 2003, ***5***, 1369.

P-Chiral Phosphine Ligand QuinoxP*



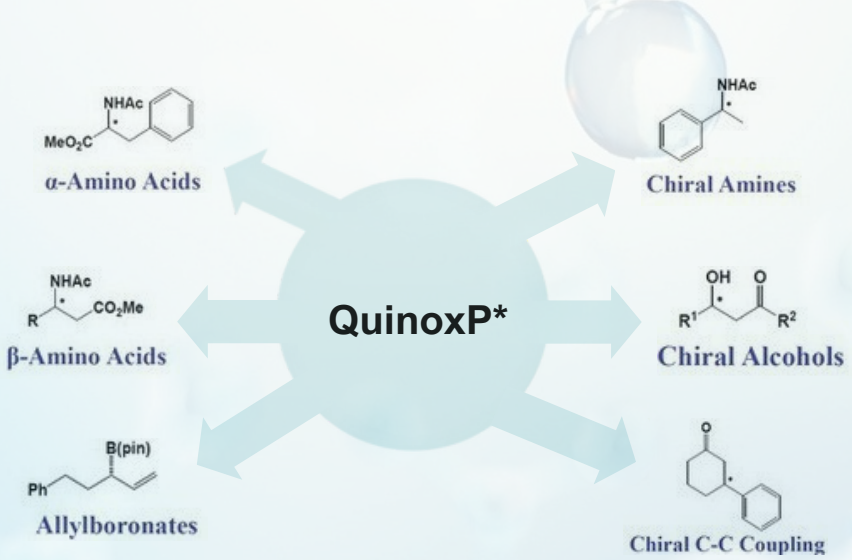


(*R*,*R*)-QuinoxP*



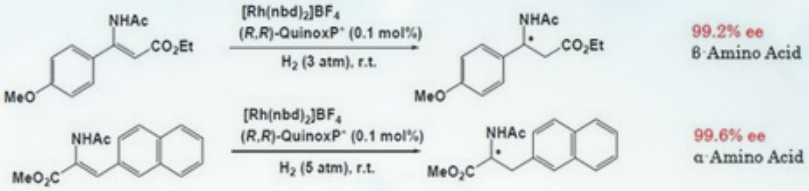
100 kg Production has been industrialized

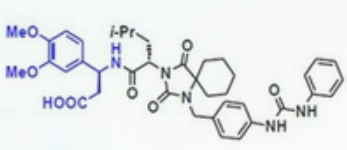
- Air-stable crystalline solid
- Excellent enantioselectivities of up to 99.9% ee in asymmetric hydrogenation and C-C or C-N bond formations
- (*S*,*S*)-QuinoxP* is also available.
- **QuinoxP* is patented by NCI.**



Application examples

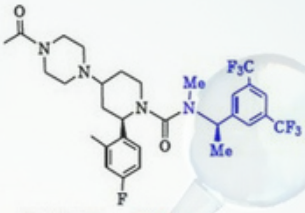
Enantioselective Hydrogenation





S/C 1,000 97.7% ee

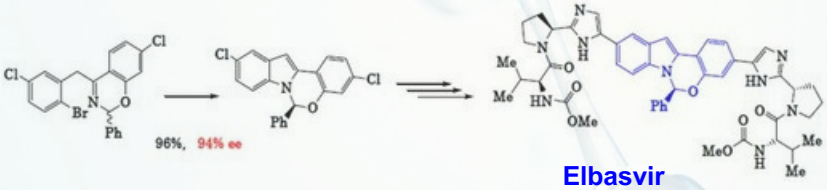
VLA-4 antagonist S9059



S/C 10,000 99.9% ee

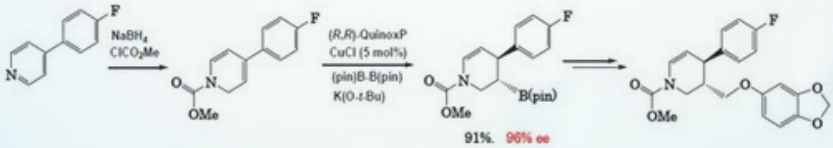
Casopitant

Enantioselective C-C or C-N bond forming reaction



Elbasvir

J. Am. Chem. Soc., 2015, ***137***, 13728.



J. Am. Chem. Soc., 2016, ***138***, 4338.

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