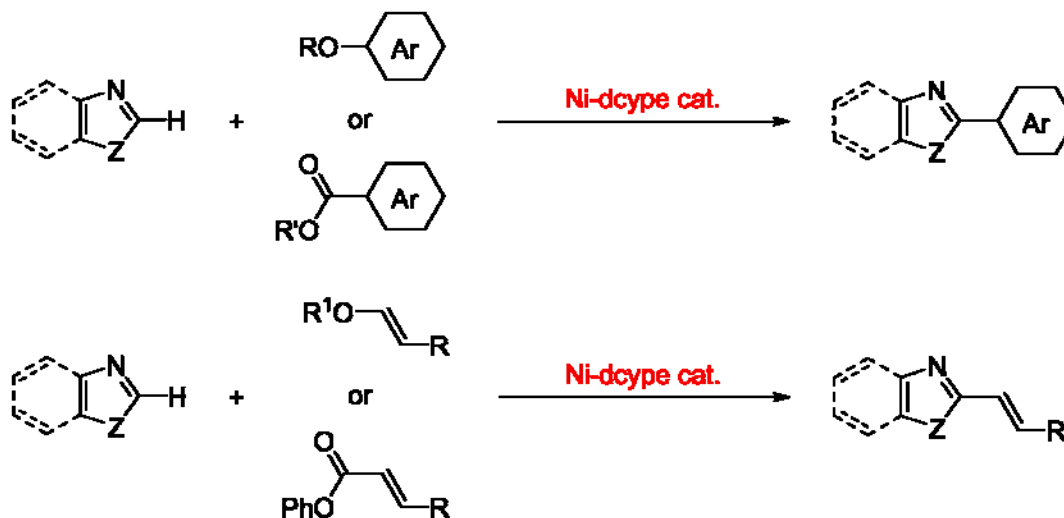


Nickel Catalyst for Direct Cross Coupling (Ni-dcype)

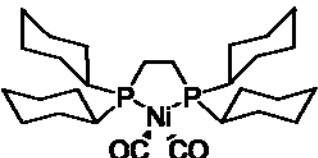


Cross coupling reaction is one of the useful reactions in the organic syntheses and is widely used for the syntheses of pharmaceuticals, agricultural materials, bioactive compounds, and organic electrochemical materials.

Our company launched a new Ni catalyst (Ni-dcype) developed by Prof. Kenichiro Itami, Prof. Junichiro Yamaguchi of Institute of Transformative Bio-Molecules (WPI-ItbM), Nagoya University. Cross coupling products are obtainable in high yields using this catalyst by the reaction of heteroaromatic compounds with phenol derivatives, aromatic compounds bearing ester functions, enol compounds, or α, β -unsaturated esters.



List of product

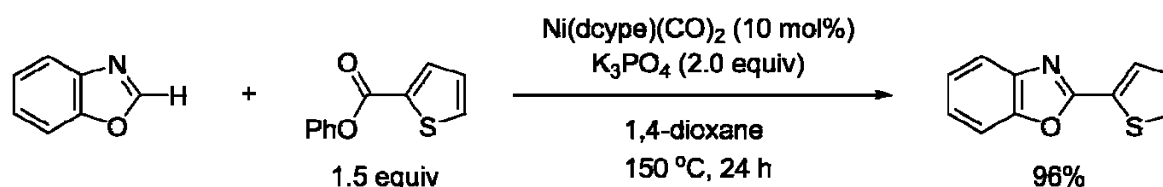
Product	Product number	Package
[1,2-Bis(dicyclohexylphosphino)ethane]dicarbonylnickel CAS : 141974-66-5 FW : 537.31	04870-65	500 mg
	04870-55	5 g

Advantages of this reaction

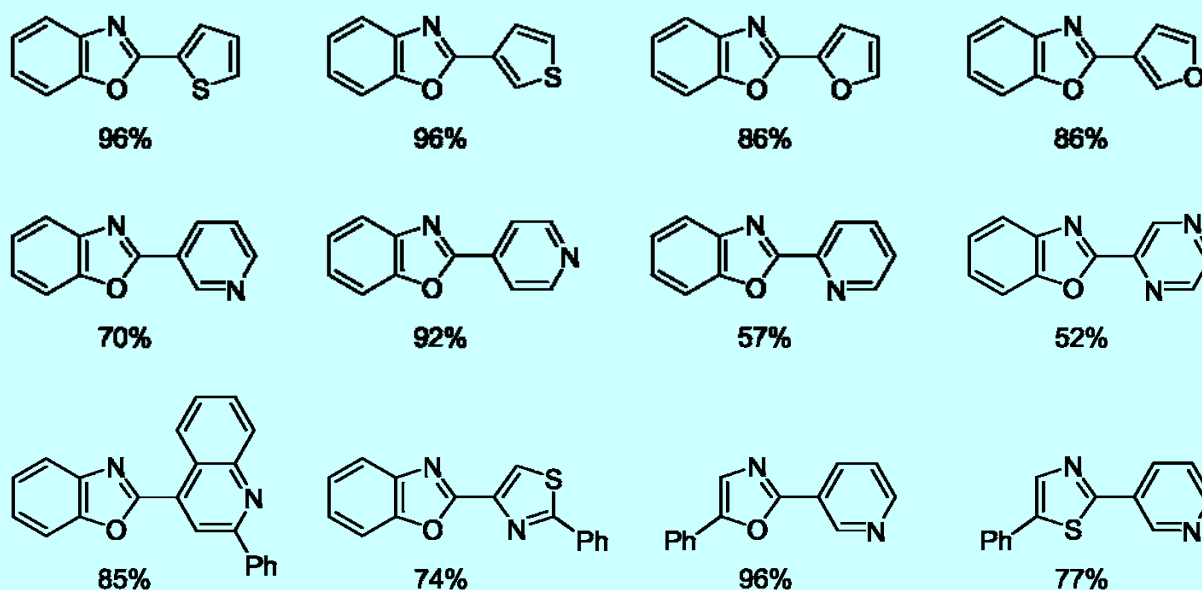
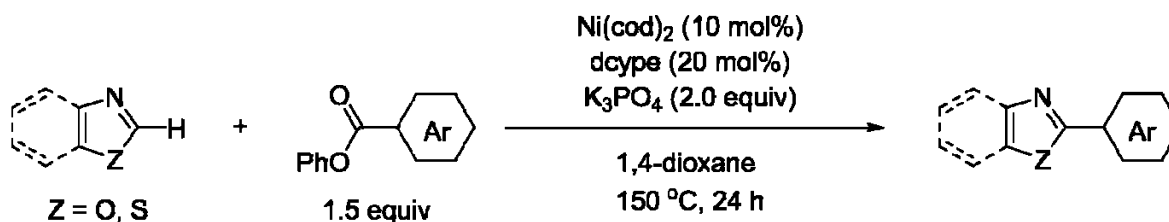
- New type of cross coupling reaction, which is not conducted with the previous catalysts
- Green reaction without using of organometallic substrates and organic halogen compounds
- Ubiquitous Ni catalyst (non-use Pd)

Preparation of 2-arylazole compounds

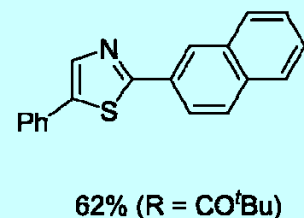
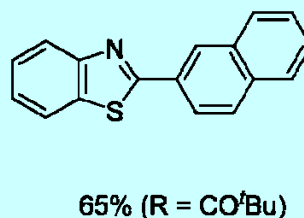
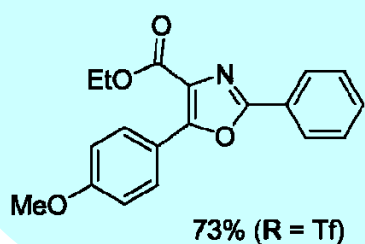
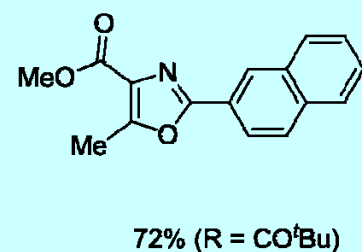
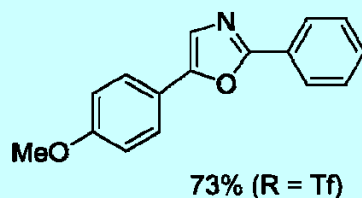
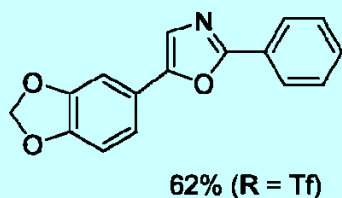
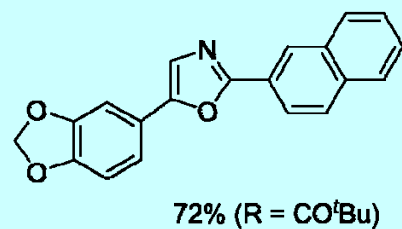
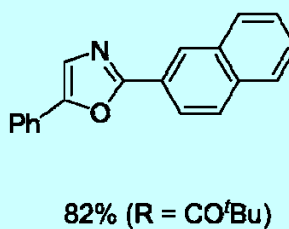
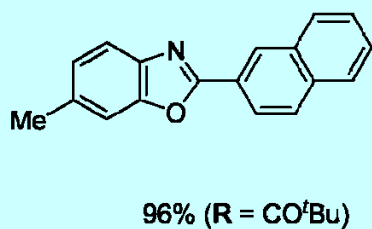
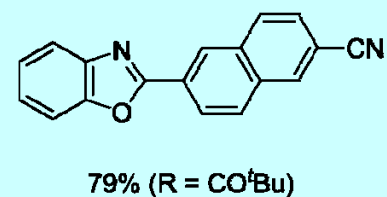
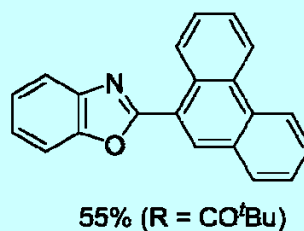
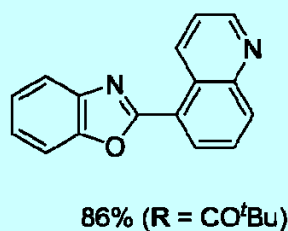
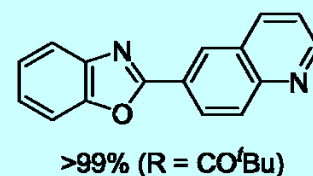
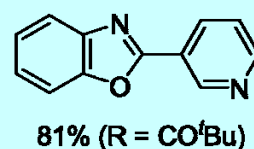
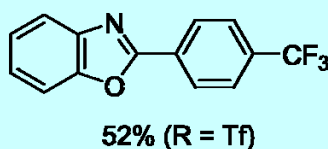
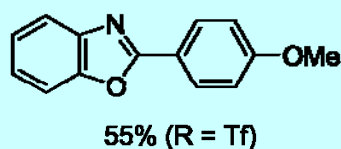
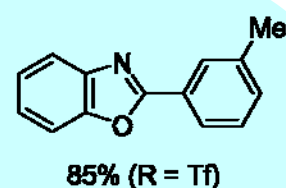
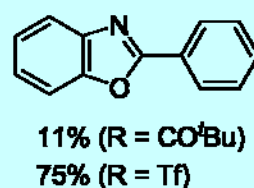
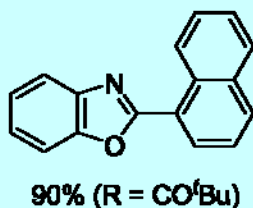
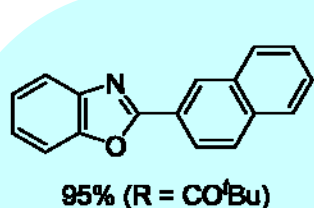
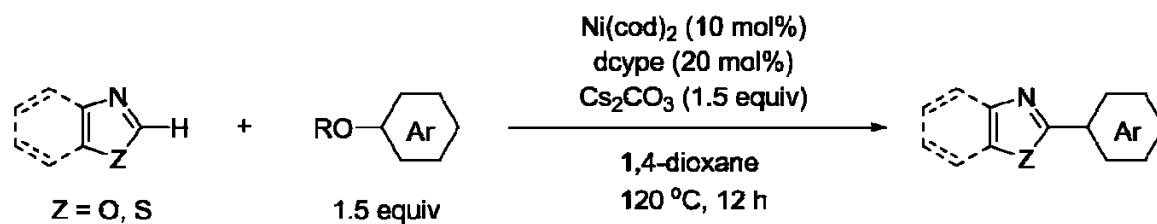
This catalyst is applicable for the cross coupling reaction of 1,3-azoles and aromatic ester compounds via the elimination of ester group, leading to 2-arylazoles quantitatively¹⁾.



With *in situ* formed Ni catalyst from Ni(cod) and DCYPE, the cross coupling reaction proceeds effectively to give the corresponding coupling products.

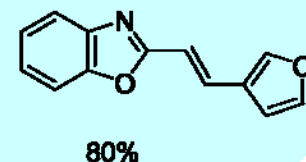
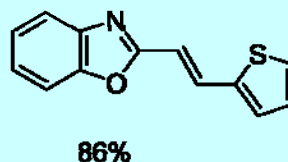
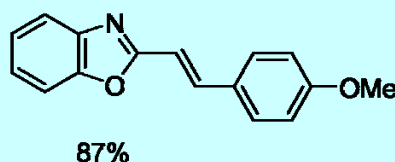
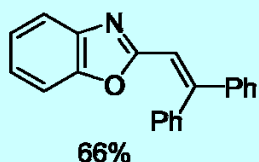
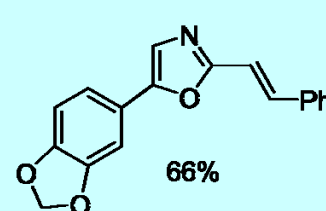
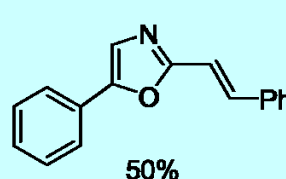
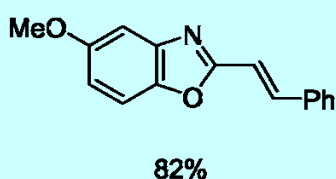
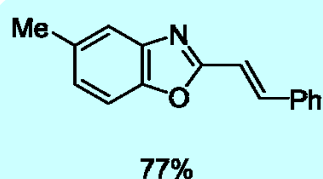
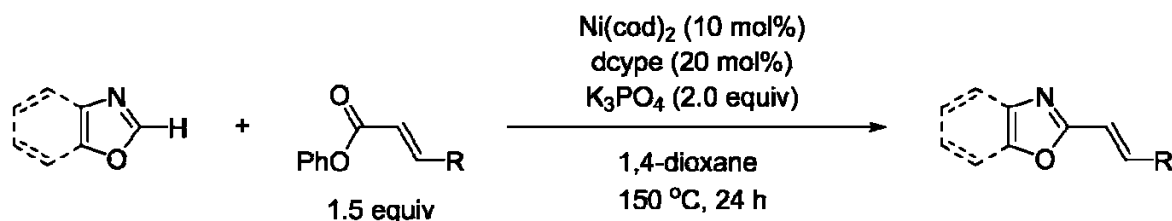


Ni-dcype is effective for the cross coupling of azoles and C-H/C-O coupling of phenol derivatives, leading to 2-arylazoles².



Preparation of 2-alkenylazole compounds

Ni-dcype is effective for Mizorogi-Heck type cross coupling reaction of 1,3-azoles and α, β -unsaturated esters, leading to the corresponding alkenylazoles²⁾.



Related products

Product	Product number	Package
1,2-Bis(dicyclohexylphosphino)ethane CAS : 23743-26-2 FW : 422.60	04874-65	1 g
	04874-45	10 g
Bis(1,5-cyclooctadiene) nickel CAS : 1295-35-8 FW : 275.06	04875-65	1 g
	04875-55	5 g
Dicarbonylbis(triphenylphosphine) nickel CAS : 13007-90-4 FW : 639.28	11235-55	5 g

References

- 1) Amaike, K.; Muto, K.; Yamaguchi, J.; Itami, K. *J. Am. Chem. Soc.* **2012**, *134*, 13573.
- 2) Muto, K.; Yamaguchi, J.; Itami, K. *J. Am. Chem. Soc.* **2012**, *134*, 169.
- 3) Meng, L.; Kamada, Y.; Muto, K.; Yamaguchi, J.; Itami, K. *Angew. Chem. Int. Ed.* **2013**, *52*, 10048.

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